DOCUMENT RESUME

ED 072 249 VT 018 731

AUTHOR	McKnight, A. James; Hundt, Alan G.
TITLE	Driver Education Task Analysis: Instructional Objectives. HumRRO Safety Series.
INSTITUTION	Human Resources Research Organization, Alexandria, Va.
SPONS AGENCY	National Highway Traffic Safety Administration (DOT), Washington, D. C.
PUB DATE	Mar 71
NOTE	313p.
AVAILABLE FROM	Human Resources Research Organization (HumRRO), 330 North Washington St., Alexandria, Virginia 22314 ($10.00)
EDRS PRICE	MF-$0.65 HC-$13.16
DESCRIPTORS	Answer Keys; *Behavioral Objectives; *Driver Education; *Educational Objectives; Motor Vehicles; Performance Tests; Student Behavior; *Task Analysis; *Traffic Safety; Transportation; Vehicular Traffic

ABSTRACT

Developed from a systematic analysis of driving behaviors, this publication contains a set of instructional objectives for driver education courses and a series of tests designed to measure the degree to which the instructional objectives have been met by students. Part 1 provides a description of objectives for 74 learning units, including such topics as: (1) Starting, (2) Downshifting, (3) Freeway Driving, (4) Being Passed, (5) Traffic Circles, and (6) Night Driving. Each unit contains: (1) overall purpose, (2) performance objectives listed according to degree of criticality, and (3) description of the knowledges and skills needed by the student in order to meet the performance objectives. Part 2 describes and provides driver performance and knowledge tests and answer keys. (SB)

ED 072249

DOT
UT

HumRRO Safety Series

Driver Education Task Analysis: Instructional Objectives

HumRRO
Human Resources Research Organization

ED 072249

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

Driver Education Task Analysis: Instructional Objectives

by

A. James McKnight and Alan G. Hundt

HumRRO Safety Series

HUMAN RESOURCES RESEARCH ORGANIZATION

March 1971

This research was performed for
U.S. Department of Transportation
National Highway Traffic Safety Administration
Contract FH-11-7336

Reproduction in whole or in part is permitted
for any purpose of the U.S. Government.
Approved for public release; distribution unlimited

The contents of this report reflect the views of the Human Resources Research Organization which is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policy of the Department of Transportation. This report does not constitute a standard, specification, or regulation.

Human Resources Research Organization (HumRRO)
300 North Washington Street
Alexandria, Virginia 22314

FOREWORD

This analysis of instructional objectives for driver education was originally prepared by the Human Resources Research Office for the U.S. Department of Transportation. It is being published by HumRRO because numerous requests have indicated its continuing usefulness in the fields of research and training in driver education. It is also available from the National Technical Information Service (NTIS) under the same title, identified as DOT HS 800 369 (HumRRO Technical Report 71-9), dated March 1971.

It is the third in a series of four reports describing the development of driver education objectives and deals with the performance and enabling objectives and the evaluation instrument which resulted from a driver task analysis. The first report in the series, *Driver Education Task Analysis: Task Descriptions* (DOT HS 800 367, HumRRO Technical Report 70-103), provides an inventory of the driver tasks from which the objectives were drawn. The second report, *Driver Education Task Analysis: Task Analysis Methods* (DOT HS 800 368, HumRRO Technical Report 72-13), describes the procedures used in developing the task descriptions, and the fourth report, *Driver Education Task Analysis: The Development of Instructional Objectives* (DOT HS 800 370, HumRRO Technical Report 72-14), describes the procedures used to develop the objectives from the task analysis.

The work described in this report was performed by HumRRO Division No. 1 (System Operations), Alexandria, Virginia, Dr. J. Daniel Lyons, Director, under sponsorship of the National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (Contract No. FH 11-7336). Dr. A. James McKnight was in charge of the study and Dr. Alan G. Hundt was Project Director during the phase of the study described in this report. The project staff included Mr. Bert B. Adams, Mrs. Jane V. Lee, Mr. Jerome P. Corbino, and Mrs. Mary E. Berry. Mr. Richard M. Gebhard assisted in preparation of the evaluation instrument.

Appreciation is expressed to the project advisory panel for assistance ranging from general guidance to direct participation, in carrying out activities of the project. Members of the panel were: Dr. Richard W. Bishop, Florida State University; Dr. Alphonse Chapanis, Johns Hopkins University; Dr. Leroy Dunn, NHTSA; Mr. Paul Halula, North American Professional Driver Education Association; Dr. Earl D. Heath, NHTSA; Dr. Francis Kenel, Illinois State University; Dr. P. Robert Knaff, NHTSA; and Dr. Robert O. Nolan, Michigan State University. Mr. Robert M. Nicholson, NHTSA, served as Contract Manager during the phase of the study reported in this volume.

This publication is part of the HumRRO Safety Series.

Meredith P. Crawford
President
Human Resources Research Organization

CONTENTS

Page

Introduction 3
  Instructional Objectives 3
    Performance Objectives 3
    Enabling Objectives 4
  Evaluation Instrument 5
    Driving Fundamentals Test 5
    Driving Situations Test 5
    Driving Knowledge Test 6

Part I: Instructional Objectives

Preparation 12
Starting 16
Accelerating 20
Starting on Grades 24
Steering—Lane Keeping 26
Steering—Turning 28
Speed Control 32
Downshifting 34
Stopping 36
Backing 40
Skid Control 44
Surveillance 46
Urban Driving 50
Highway Driving 52
Freeway Driving 54
Car Following 58
Passing 62
Entering Traffic 68
Leaving Traffic 70
Lane Changing 72
Parking 76
Leaving a Parking Space 82
Pedestrians, Cyclists, and Animals 84
Emergency Areas 88
Parked Cars 90
Being Passed 92
Being Followed 94
On-Coming Cars 98
Overtaking 104
Special Vehicles 108
Intersections—Approaching 112
Intersections—Through 116

Page
Intersections—Right Turn 120
Intersections—Left Turn 122
Traffic Circles 126
On-Ramps 128
Off-Ramps 132
Hills 136
Curves 140
Lane Usage 142
Road Surfaces 144
Wet Roads 146
Road Shoulders 150
Obstructions 152
Snow 156
Sand 162
U-Turns 164
Two-and Three-Point Turns 168
Entering Off-Street Areas 170
Off-Street Driving 174
Railroad Crossings 178
Bridges and Tunnels 182
Toll Plazas 184
Limited Visibility 188
Climate 192
Wind 194
Night Driving 196
Towing 202
Hauling Loads 206
Car Emergencies 208
Mechanical Problems 214
Disabled Cars 216
Dealing With Breakdowns 218
Pushing Cars 222
Trip Planning 224
Loading 228
Trailers 232
Alcohol and Drugs 234
Physical and Emotional Conditions 238
Maintenance 244
Inspection and Servicing 252
Repair 254
Certification 258
Accidents 260

Part II: Evaluation Instrument 263
Driving Fundamentals Test 265
Driving Situations Test 307
Driving Knowledge Test 369

Driver Education Task Analysis: Instructional Objectives

INTRODUCTION

This volume contains a set of instructional objectives for driver education courses, as well as a series of tests designed to measure the degree to which the instructional objectives have been met by students. The objectives and the tests were developed to assist driver educators in preparing new curricula or revising old curricula in a way that would help students to meet the needs of today's highway transportation system. The objectives do *not* in any sense constitute a curriculum themselves.

The objectives were developed from a systematic analysis of the driver's many tasks, the reduction of each task into its required individual behaviors, and an evaluation of each behavior's criticality to the safety and effectiveness of the highway transportation system. The task analytic effort is described in two earlier reports: *Driver Education Task Analysis, Volume I: Task Descriptions*[1], and *Driver Education Task Analysis, Volume II: Task Analysis Methods*[2]. The way in which the instructional objectives have been developed from the results of the task analysis is described in another report entitled *Driver Education Task Analysis, Volume IV: Development of Driver Education Objectives*[3].

This volume is in two parts: Part I, "Instructional Objectives," provides a detailed description of instructional objectives for 74 learning units, and Part II, "Evaluation Instrument," describes and provides driver performance and knowledge tests.

INSTRUCTIONAL OBJECTIVES

The instructional objectives described in Part I are grouped into 74 learning units. Each learning unit describes the following:

(1) Purpose—the overall purpose of the learning unit.

(2) Performance Objectives—the performance the driver education student must exhibit if the purpose of the unit is to be attained.

(3) Enabling Objectives—a detailed description of the knowledges and skills the student must possess in order to meet performance objectives.

Performance Objectives

Performance objectives describe the behaviors that driver education students should be expected to perform, or be able to perform, upon completion of a beginning driver education course. The objectives were selected by the advisory panel identified in the preface of this volume, and were based upon an evaluation of task criticality performed by 100 authorities in the field of highway safety. They represent what the panel considered to be minimum requirements for safe and effective entry into the highway transportation system.

Some of the objectives will be difficult to achieve within the limitations of time, facilities, and other resources that prevail in many schools. In fact, there are a few objectives, such as those concerned with evasive maneuvers, that will require technological advances in the area of simulation or range construction before they can be adequately treated anywhere. The driver educators on the advisory panel felt strongly that if the highway transportation system is to be improved, the preparation of new drivers must be aligned with the needs of that system and not with the limitations of the *present* educational resources.

As desirable as it may be, it is not reasonable to expect that all students will attain all objectives. Many errors will occur. Students will forget to signal a lane change, will turn a corner too sharply, or will follow the car ahead too closely. If the performance objectives are to serve as standards of minimum qualification, it is necessary to establish minimum levels of acceptable performance. To provide such standards, the objectives have been grouped into five major levels of criticality. Each level has been assigned a minimum standard of performance by an independent group of highway safety authorities. The standards are as follows:

---

[1] A. James McKnight and Bert B. Adams. *Driver Education Task Analysis, Volume I: Task Descriptions,* Department of Transportation HS 800 367 (HumRRO Technical Report 70-103), November 1970.

[2] A. James McKnight and Bert B. Adams, *Driver Education Task Analysis, Volume II: Task Descriptions,* Department of Transportation HS 800 368 (HumRRO Interim Report IR-D1-70-1), November 1970.

[3] A. James McKnight and Alan G. Hundt, *Driver Education Task Analysis, Volume IV: The Development of Instructional Objectives,* Department of Transportation HS 800 370 (HumRRO Interim Report IR-D1-71-1), March 1971.

Criticality of Behaviors	Percent of Behaviors That Must Be Performed Correctly
High	95
Moderately High	85
Moderate	70
Moderately Low	70
Low	50

These standards mean that on a road test containing 20 situations that were identified highly critical in the instructional objectives, the student would have to handle 19 (95%) correctly to be considered minimally qualified. On the other hand, he could make as many as six mistakes in handling 20 moderate or moderately low criticality situations and still be considered qualified.

The standards given represent the judgment of highway safety specialists as to what should be expected of a student graduating from a driver education course. The standards are based, as are the objectives, upon the needs of the highway transportation system, not the present ability of students or instructors to attain them. They should be reviewed by the driver educator as goals, rather than as firm standards, until the feasibility of attaining them has been established.

A number of performance objectives relate to long-term driver behavior—the use of alcohol and drugs or the care of the automobile. Because there is no effective way to evaluate the student's performance relative to these objectives upon completion of a driver education course, the objectives are worded in terms of what the "driver" rather than the "student" must do. The statement of purpose for these objectives is given as "educating" rather than "enabling" an individual to perform.

The order in which objectives are listed in Part I follows a sequence of generally increasing complexity, which is considered logical from a teaching viewpoint. However, driver educators have their own preferred ways of approaching subjects and it is not necessarily intended that the objectives be taken up in the order in which they are listed.

The first learning unit can serve as a specific example of how to use this volume. The units' purpose, "to enable the student to prepare the car and its occupants for a safe and comfortable trip," is presented at the top of the page. Each paragraph in the unit describes a specific performance objective. The objectives are listed vertically, more or less in the sequence in which they would occur, in cases when the behaviors normally occur in a particular sequence. When there is no particular sequence, the behaviors are organized into logical groupings. Each sequential or other logical category is labeled at the left-hand side of the page.

The criticality of each objective may be determined by the column in which it appears. In the example, none of the objectives was rated at the "high" criticality level. Two of the behaviors were rated at the "moderately high" criticality level. The student's failure to remove accumulated snow or ice, or his failure to adjust mirrors before starting the car, would be penalized more heavily than his failure to meet such low criticality objectives as failure to clean the windows or windshield. A student who failed to remove snow from the windows or to adjust his mirrors could be considered "qualified" only if he did well enough on other items of moderately high criticality to total 70% correct at that criticality level. However, he need successfully perform only 50% of such low-criticality items as cleaning the windshield in order to be considered qualified.

Enabling Objectives

Within each learning unit, performance objectives are followed by a description of related knowledges and skills. These knowledges and skills constitute "enabling" objectives in the sense that they enable the student to meet performance objectives.

Knowledges

These objectives are primarily facts about how, when, where, or why various performances are carried out. The description of knowledge objectives is intended primarily to identify types of information to be covered by driver educators. The provision of factual information is intended primarily to amplify the more general description of the objective. It is *not* intended that factual information should be limited to what appears beneath the knowledge objective. Each instructor is expected to include any additional information he believes will enhance the attainment of a performance objective.

Where specific facts relate to individual performance objectives, they would, of course, have the same criticality as the performances. However, the more general definitions of knowledge objectives relate to more than one performance and therefore cannot be assigned to a particular criticality level. For example, the first knowledge objective in the illustrative example concerned with trip preparation deals with controls, displays, and accessories that relate to a number of performance objectives.

Skills

While some form of knowledge underlies almost all performance objectives, there are some cases in which performance also depends upon the development of complex skills. These include *perceptual* skills, such as the ability to judge passing distance, or *perceptual-motor* skills, such as the ability to back a car into a tight parking space. These performance objectives require, in addition to knowledge, some level of practice before they may be attained. It is this *need for practice* that defines a skill as the term is used in this volume. The nature and development of skills are not as well understood as those of knowledges. The skill descriptions that are provided here are intended only to (a) identify performances for which some degree of actual or simulated practice is required, and (b) identify what appear, through analysis, to be the specific relevant situational and response characteristics. In the example, two skill descriptions are given, one that is concerned with locating and manipulating controls, and the other with the rapid location and interpretation of gages.

The reason for providing this description is primarily to alert driver educators to those components of the learning unit that must be dealt with in an operational or simulated automobile. It should be apparent that the same skills underlie almost all performance objectives having to do with operation of an automobile. However, to avoid repetition, enabling objectives are described only in connection with the first learning unit requiring them.

EVALUATION INSTRUMENT

An evaluation instrument designed to assess the attainment of the specified performance and knowledge objectives is described in Part II of this book. The evaluation instrument consists of three separate tests—driving fundamentals, driving situations, and driving knowledge.

Driving Fundamentals Test

The Driving Fundamentals Test is a performance test designed to assess the student's basic ability to control the motion of an automobile and is to be administered on an off-road area or a little used roadway. It requires no special facilities or equipment. It is highly similar to the off-road tests administered as part of many current driver education courses. The test is prepared in two forms so that it may be administered in vehicles with either a manual or an automatic shift.

The student's response to each of the test items is recorded as simply "pass" (P) or "fail" (F). For ease in scoring, all answers are recorded on a single "scoring sheet." The right-hand margins of test pages are progressively recessed so that as the page is turned a new column of the scoring sheet is available for recording adequacy of student response. The reader should imagine that each page of the test booklet is cut along the solid vertical line running down the right-hand side of the page.

Separate scoring stencils are provided for the moderately high criticality performance and the moderate and moderately low criticality performances. The student is expected to successfully perform 85% of the former and 70% of the latter. All of the performances in the driving fundamentals test fall into these two categories.

Driving Situations Test

The Driving Situations Test is intended to assess the ability of the student to deal with a broad range of situations that occur in "real-world" driving and is conducted on an actual roadway in ordinary traffic. Because the specific route to be taken by the student must be designated by the test administrator, the test, itself, cannot prescribe the specific observations that will occur. What the test does provide is (a) a list of both planned and unplanned driving situations; (b) a list of observations that may be made in each situation; (c) a format for scoring the student's responses, and (d) a set of performance standards that may be used to determine whether the student is qualified to enter the highway transportation system.

The Driving Situations Test may be used either as a test booklet or as a device for developing a route-specific test booklet. Instructions for using the test as a test booklet begin on page 307. The booklet itself would be configured the way it appears in this book. As with the Driving

Fundamentals Test, the right-hand margin is progressively recessed so that answers may be recorded on a common answer sheet. It is also recessed from the bottom so that each page may be quickly identified. There actually are two separate booklets, one for planned and one for unplanned situations. The two booklets should be fastened back-to-back, so the administrator can move from one type of situation to another simply by turning the booklet over.

It is imperative that the test administrator plan the specific points at which "planned" observations will be made and the general areas in which "unplanned" observations will be made. If this is not done, the administrator, when confronted by more responses than he can handle, will begin to select which responses to record "on the spot." There is a danger that some kind of bias may enter his selection of responses (e.g., recording only the errors), thus giving a distorted picture of the student's actual performance. The best way to guard against any bias is to limit observations in advance. Use of the test booklet for actual administration of the test is workable only when a single administrator will be giving the test.

An alternative is to use the test booklet as an aid in preparing a route-specific "local" test, which will specify for the test administrator the observations to be made. As the test developer proceeds along a particular route, he uses the test format to select the specific observations that are most appropriate to the situation he encounters. For example, in selecting observations to be made during the right turn at Gibson Street (in the specific "local" test described), the administrator's task is simplified by eliminating observations of the student's reaction to vehicular or pedestrian traffic. He would make such observations at a later intersection, where either of these is likely to be a problem.

In developing a local driving situations test, the student's responses to unplanned situations would be observed only in those areas where such situations are likely to arise. For example, the section between Duke and Gibson Street represents a shopping district with 20-minute metered parking. The prospect of encountering the situations identified in Step 3 of the test ("Other Vehicles - Parked") is great enough to warrant looking for them.

Whether the Driving Situations Test in this book or one of local derivation is used, the student would be scored as "pass" or "fail" depending upon whether he exhibited the response called for. The student's score would be the ratio of correctly handled situations ("pass") to the total number of situations arising ("pass" plus "fail"). Such ratios would be calculated separately for situations of differing criticality.

It is obvious that both the number and the nature of situations encountered by different students will vary considerably. The test cannot, therefore, be "standardized." The only way to standardize a road test is to eliminate observations concerned with such unplanned contingencies as traffic, weather, and various signal devices. Such restrictions would severely limit the validity of the test as a measure of the student's overall ability. The question of standardization vs. validity is treated at greater length in Volume IV of the report series cited earlier. As long as the test is used primarily for educational purposes—to identify specific student strengths and weaknesses—the lack of standardization does not constitute a handicap. Yet, even where the test is to be used for certification purposes (i.e., to determine which students pass the course) the Driving Situations Test may be used equitably as long as enough situations are encountered to provide a reliable estimate of the student's overall ability to perform. Limited experience in administering the Driving Situations Test indicates that 30-45 minutes of driving in a combined urban-rural setting will provide more than 100 observations.

Driving Knowledge Test

A 105-item Driving Knowledge Test has been furnished to provide a means of assessing the student's mastery of certain enabling knowledges. While most of the items are multiple choice, eight open-end completion items were prepared to cover information for which the multiple-choice format was not considered appropriate.

The correct answers to the various items are provided on page 387. The items have been grouped according to the criticality of the performance objectives to which they appear to be most closely related. Use of the same standards presumes that to perform correctly, the student must possess the related knowledge. The validity of this assumption probably depends upon how closely related the information is to the performance. Until an empirical analysis is made of the relation between enabling and performance objectives, the scoring standards should be viewed as goals rather than firm standards. At least the use of the standards provide a means of giving differential weights to items of differing criticality and avoids treating all questions as being of equal importance.

A companion answer booklet providing correct answers and explanations of each item in the Driving Knowledge Test accompanies the test itself in this volume. Providing this booklet to the student is intended to enhance the educational value of the test.

Part I

Instructional Objectives

Part I

INSTRUCTIONAL OBJECTIVES

Index to the Driver Education Instructional Objectives:

Subject	Purpose	Page
Preparation	To enable the student to prepare the car and its occupants for a safe and comfortable trip.	12
Starting	To enable the student to start the car.	16
Accelerating	To enable the student to accelerate smoothly and safely from a standing position.	20
Starting on Grades	To enable the student to start a car on an upgrade and on a downgrade from a standing position.	24
Steering—Lane Keeping	To enable the student to maintain proper position in required lane.	26
Steering—Turning	To enable the student to make a safe, comfortable turn.	28
Speed Control	To enable the student to adjust speed to existing traffic conditions to account for variations in traffic flow and legal speed limits.	32
Downshifting	To enable the student to downshift to maintain speed or reduce speed, before starting down a hill, in heavy, slow-moving traffic, or in emergency situations.	34
Stopping	To enable the student to come to a normal safe stop on level roadways and on hills and to make required rapid stops.	36
Backing	To enable the student to back up safely and smoothly.	40
Skid Control	To enable the student to prevent and stop a skid.	44
Surveillance	To enable the student to maintain a complete and accurate understanding of the driving environment and to identify any critical changes that might affect his driving.	46
Urban Driving	To enable the student to drive safely in an urban area and react appropriately to pedestrians and to other traffic.	50
Highway Driving	To enable the student to drive in a safe, efficient manner in open country and mountainous terrain.	52
Freeway Driving	To enable the student to safely enter, drive on, and exit from a freeway.	54
Car Following	To enable the student to maintain an adequate separation between the car and the vehicle ahead.	58
Passing	To enable the student to make sound passing decisions and to complete passes safely without interference to other road users.	62
Entering Traffic	To enable the student to enter traffic without interfering with other vehicles.	68

Subject	Purpose	Page
Leaving Traffic	To enable the student to leave the line of traffic with minimal interference to the vehicles behind and to the side of the car.	70
Lane Changing	To enable the student to change lanes safely and without obstructing the flow of traffic.	72
Parking	To enable the student to park the car safely and legally, and to exit from the car, with minimal interference with other vehicular or pedestrian traffic.	76
Leaving a Parking Space	To enable the student to leave a parking space safely without obstructing other vehicular or pedestrian traffic.	82
Pedestrians, Cyclists, and Animals	To enable the student to respond with safe and cautious actions when encountering pedestrians, cyclists, and animals.	84
Emergency Areas	To enable the student to drive safely through or by an attended emergency area, or to provide necessary assistance when he is the first to reach a severe accident.	88
Parked Cars	To enable the student to drive safely alongside parked and parking vehicles.	90
Being Passed	To enable the student to accommodate a passing vehicle by adjusting the car's speed and/or position as necessary for the other vehicle to complete the pass quickly.	92
Being Followed	To enable the student to drive ahead of other vehicles with a minimum risk of rear-end collision.	94
On-coming Cars	To enable the student to adjust his course as necessary when meeting oncoming vehicles, and to take evasive action when necessary to avoid a head-on collision.	98
Overtaking	To enable the student to safely overtake a vehicle ahead and to avoid having to initiate emergency maneuvers.	104
Special Vehicles	To enable the student to act safely when in the vicinity of special vehicles, viz., school buses, police, fire, and other emergency vehicles.	108
Intersections—Approaching	To enable the student to approach an intersection and to react appropriately to other traffic and traffic controls.	112
Intersections—Through	To enable the student to proceed through an intersection prepared to react to changing traffic conditions.	116
Intersections—Right Turn	To enable the student to safely make a right turn at an intersection.	120
Intersections—Left Turn	To enable the student to safely make a left turn at an intersection.	122
Traffic Circles	To enable the student to negotiate traffic circles safely.	126
On-Ramps	To enable the student to safely enter a main roadway from an entrance ramp with or without an acceleration lane.	128
Off-Ramps	To enable the student to exit safely from the main roadway.	132
Hills	To enable the student to negotiate hills safely and effectively.	136

Subject	Purpose	Page
Curves	To enable the student to negotiate highway curves safely and comfortably.	140
Lane Usage	To enable the student to select the appropriate lane for driving.	142
Road Surfaces	To enable the student to drive safely on different types of road surfaces; to enable the student to adjust his driving according to road surface conditions.	144
Wet Roads	To enable the student to drive safely on a wet surface.	146
Road Shoulders	To enable the student to deal effectively and safely with road shoulders.	150
Obstructions	To enable the student to deal safely with roadway obstructions and barricades.	152
Snow	To enable the student to drive, stop, and park safely on ice- and snow-covered roadways.	156
Sand	To enable the student to drive safely on sand-covered roadways.	162
U-Turns	To enable the student to perform a U-turn where legally permissible.	164
Two- and Three-Point Turns	To enable the student to turn around by means of a three-point turn, or a two-point turn using a driveway.	168
Entering Off-Street Areas	To enable the student to approach and enter off-street areas in a safe and efficient manner.	170
Off-Street Driving	To enable the student to drive safely in and around off-street areas without impeding traffic flow.	174
Railroad Crossings	To enable the student to safely cross railroad crossings and to respond to possible dangers at such crossings.	178
Bridges and Tunnels	To enable the student to enter, drive through or across, and leave a tunnel or bridge safely and expeditiously.	182
Toll Plazas	To enable the student to negotiate toll plazas in a safe and expeditious manner.	184
Limited Visibility	To enable the student to drive safely during weather conditions that limit visibility.	188
Climate	To enable the student to drive safely and comfortably during extremely hot or extremely cold weather.	192
Wind	To enable the student to maintain directional control during a high crosswind.	194
Night Driving	To enable the student to drive safely during darkness.	196
Towing	To enable the student to adjust his driving behavior to compensate for the effects of towing a trailer.	202
Hauling Loads	To enable the student to adjust his driving behavior to compensate for the effects of hauling heavy loads within or on top of the car.	206
Car Emergencies	To enable the student to react safely when a car's malfunction endangers its occupants and other road users.	208

Subject	Purpose	Page
Mechanical Problems	To enable the student to respond appropriately to malfunction indications although the apparent malfunction may be unlikely to affect the safety of the driver or other road users.	214
Disabled Cars	To enable the student to deal safely with breakdowns that disable the car while on the road.	216
Dealing With Breakdowns	To educate the student to remedy various on-road emergency malfunctions.	218
Pushing Cars	To educate the student in the methods, procedures, and hazards involved when being pushed or pushing another vehicle.	222
Trip Planning	To educate the student in the planning and preparation which precede driving and in navigational activities.	224
Loading	To enable the student to load objects securely in the passenger area, trunk, and on the roof.	228
Trailers	To enable the student to attach a trailer to the car and load the trailer properly.	232
Alcohol and Drugs	To educate the student on the effects that drugs and alcohol have on driving safety and performance.	234
Physical and Emotional Conditions	To enable the student to become aware of physical and emotional conditions that may affect driving ability and how to compensate for such conditions.	238
Maintenance	To educate the student to maintain the car in sound operating condition through routine care and servicing.	244
Inspection and Servicing	To educate the student to have the car inspected and serviced in accordance with the recommendations of the manufacturer.	252
Repair	To educate the student to have the car repaired in response to breakdowns, symptoms of malfunctions, and deficiencies noted during inspection and servicing.	254
Certification	To inform the student about driver and car certification	258
Accidents	To educate the student on the post-accident responsibilities of the driver.	260

PURPOSE: To enable the student to prepare the car and its occupants for a safe and comfortable trip.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Before Entering Car			The student will look around the car for objects that would block its path or could damage the tires.	He will visually inspect the tires for inflation pressure level, defects and damage and observe the direction toward which the front wheels are pointed.	
		The student will remove accumulated snow or ice from the windows, windshield and lights. To do so, he will: ● Sweep off the snow with a broom or brush. ● Either scrape off the ice with a plastic scraper or apply an ice solvent to the windshield.	He will remove condensed moisture from the windshield and windows with a clean dry cloth—not with his bare hand.	The student will unlock the car door and, before he is ready to start the engine, insert the key in the ignition to avoid misplacing it.	The student will clean dirty windows and lights with a cloth. He will clean the windshield with water, a solution of ammonia and water, or a dry cloth.
Upon Entering Car				He will make sure that all objects are removed from the dashboard, sun visor, rear window deck, floor, and from under the front seat.	The student will clean the inside of the windshield as necessary with a dry cloth or the solution mentioned above.
				In supervising the loading of passengers, he will make sure that tall rear seat passengers do not obstruct his vision.	
			The student will adjust the seat vertically and/or use a seat cushion in order to see over the steering wheel without strain.	The student will move the seat forward or backward in order to: ● Reach all of the controls easily. ● Rest the foot on the floorboard with a slight bend in the knee.	
		The student will: ● Adjust the rearview mirror to center on the road behind. ● Adjust the side mirror so that the left edge of the car is barely visible from the normal driving position.	After cleaning the windshield and windows, adjusting the mirrors, and seating the passengers, he will look to make sure complete 360-degree vision is available.	After adjusting the seat, he will select the appropriate day/night position on the rearview mirror.	

Before Starting Engine			Before starting the engine, the student will make sure all doors are completely closed and locked. After adjusting his head support, he will: ● Fasten his seat belt and make sure all the passengers have their seat belts fastened and properly adjusted.	The student will adjust his head support and instruct the front seat passenger to adjust his. He will fasten his shoulder harness and make sure the front seat passenger fastens his.	
After Starting Engine			If it is necessary to clear frost or fog from the windshield, the student may turn on the defroster after starting the engine.		The student may clean the windshield as necessary by using the windshield washers.

KNOWLEDGES

The student must know the location, function, and operation of the controls and accessories and know the location, function, and interpretation of the gauges.

The accelerator, brake pedal, clutch pedal (manual transmission), and dimmer switch, all of which are on the floor.

The ignition, gearshift lever and gear positions, directional turn signals, and steering wheel. Most of these controls are usually on the steering column.

The parking brake, a handle or handle-pedal combination located beneath the dashboard.

Light switches, the wipers, washers, temperature controls, radio, seat adjuster, head support, adjusting seat belt, and safety harness.

Speedometer, fuel gauge, temperature gauge, ammeter, oil gauge, and odometer.

The student must know the procedures to be performed routinely before driving the car and their relationship to the car, the field of vision available, and the safety of the occupants.

When the car is in a garage, the garage door must be opened before starting the engine to provide the ventilation necessary for dispelling carbon monoxide fumes from the exhaust. Without ventilation, carbon monoxide may be lethal within minutes.

The maximum field of vision, optimally 360°, should be attained before driving the car. Such visibility is dependent upon clean windows and lights, a properly adjusted seat, properly adjusted rearview and side mirrors, removal of loose items from the dashboard and rear window deck, and the seating of passengers outside the driver's line of sight.

Dirt on car lights weakens their illuminating power. Dirt on the windshield, inside or out, will intensify glare from the sun and from the headlights of oncoming vehicles. Dirty windows and lights have been mentioned as contributing causes in accidents.

Condensation should be removed with a cloth rather than a hand because a cloth will clear the surface of moisture and dust whereas a bare hand will only smear the surface.

Snow should be brushed off the roof, hood, and trunk. Snow could slide down from the roof to cover the windshield or rearwindow when the car is in motion. Also, snow that blows off the car is a distraction to drivers following and may even create an additional hazard by blowing against their windshields and blocking vision.

Improper seat adjustment and the driver being too small for the vehicle being driven have been cited as contributing causes in some accident reports reviewed.

The mirrors should be adjusted to give maximum coverage of the rear areas and so that the driver can use them by shifting his eyes, not his head or body.

Loose objects may interfere with the driver's vision by blocking his view or by being reflected in the window. Their movement may distract the driver's attention or interfere with his operation of the controls.

Firmly clamped and properly adjusted head supports minimize whiplash by stopping the rearward motion of the head and snap-back effect that cause injury. However, an improperly adjusted head support may be more hazardous than none at all.

The driver's responsibilities include supervision of passenger loading to ensure that they are properly seated and secured.

The driver and either one or two passengers should be the maximum number of occupants in the front seat. The number depends on the type of vehicle and should not exceed the number of seat belts that are available. Some states prohibit more than three persons in the front seat. In any case, the passengers must not interfere with the control of the car.

Children under ages three or four should be seated and secured in special devices such as car seats or car beds. Older children and adults should be seated with seat belts fastened and properly adjusted.

In most accidents it is safer to be held in the car than thrown out and safer to be held in one place than tossed about inside the car.

One study comparing accidents occurring with and without the use of seat belts indicated that seat belts may reduce injury occurrence by 60%.

Of persons injured in crashes, 75% sustain head injuries, with the order of vulnerability being front seat passenger, driver, and rear seat passenger. The shoulder harness better prevents impact with the steering wheel, dashboard, and windshield. A projection of 8,000 to 10,000 lives saved each year through the proper use of shoulder harnesses is based on the greatly increased probability of being killed on ejection from a car in an accident as opposed to remaining in the car. Yet only 4% of the people who have shoulder harnesses available wear them.

The seat belt—shoulder harness combination is more effective than the seat belt alone in minimizing injury in a head-on collision.

Locked doors are more likely to remain closed during a collision and thus reduce the chance of ejection. The most frequent and most severe driver injuries are caused by ejection. Locked doors also provide protection against an intruder gaining entry to the car when driving in unprotected areas.

SKILLS

The student must be able to locate and operate the controls and accessories until he can do so without looking and with a degree of speed. He must develop a crude but necessary "feel" for the car (e.g., the pressure required to activate the brakes, the seat adjustment that suits him best, the most comfortable position of the right foot on the accelerator, the location of the wiper control and the procedure for turning it on).

The student must be able to locate and read the gauges at a glance so that he will be able to give maximum attention to the roadway while keeping abreast of the car's operation.

PURPOSE: To enable the student to start the car.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Prior to Starting			Prior to starting an automatic shift car the student will place the gearshift lever in the neutral or park position. In manual shift cars, he will place the lever in the neutral position.	In a manual shift car the student will depress the clutch and hold it down until the engine starts	
Starting				When attempting to start the car the student will listen for the sound of the engine. If the engine is not heard, he will check the oil and ammeter lights which are normally lit when the engine is not running and the key has been released from the start position.	When starting the car the student will do the following: ● Depress the accelerator to set the choke or, in cars without an automatic choke, pull out the manual choke slightly. ● Release the accelerator and depress slightly. ● Turn the ignition key to the "on" position. ● Turn the ignition key clockwise until the starter is heard and hold the key in the start position until the engine starts. ● Release the key. After the engine is started he will push in the manual choke partially (in cars without an automatic choke).
Engine Failure				If the engine fails to start he will repeat starting procedure. If after several attempts the engine fails to start or if a gasoline odor is detected he will: ● Depress the accelerator to the floor and hold it there for a few seconds. ● Hold the key in the start position for several seconds. ● Repeat the starting procedure.	

After Starting				The student will idle the engine briefly for warm up only when one or more of the following conditions exist: ● The windshield must be defrosted ● A steep hill must be climbed immediately ● The car will enter a high speed roadway before normal circulation is obtained. The student will push in the manual choke completely once the engine is warm (if applicable).	

KNOWLEDGES

The student must know the sequence of steps for starting the car, what to do if the car does not start immediately, be able to recognize any of the common causes for its failure to start, and know the limitations of the car when the engine is not warm.

Most cars have a five-position switch. The positions are, from left to right: "accessories," "locked," "off," "on," and "start." The student must know the location and function of each of these positions.

Turning off all accessories and lights prior to starting the car reduces the electrical load on the battery and allows all available power to be applied to the ignition system for starting.

Depressing the clutch until the engine starts takes strain off the drive train, and prevents the car from lurching forward if the transmission is not in the neutral position.

A car with an automatic shift will start only in the park or neutral position. In neutral, transmission gears are disengaged and in park, the transmission is locked. The car cannot move under its own power with the gearshift lever in either position.

Depressing the accelerator sets the choke in automatic choke cars. If it is properly adjusted for climatic conditions, pumping the accelerator is unnecessary. Pumping the accelerator can flood the engine and should be avoided if possible.

In very cold weather extra fuel may be required if the choke has been set for a much warmer temperature. If pumping the accelerator is necessary it should be pumped only once or twice.

In manual choke cars the choke should be pulled out farther than normal for easier starting in extremely cold weather.

After having started the car, it is a good driving practice to warm the engine by driving slowly rather than allowing the engine to idle a few minutes.

Prolonged idling should be avoided in cold weather because it keeps the choke closed longer.

When the engine is warm the heater and defroster will produce warm air.

Occasionally, the car will not start immediately. Causes for engine failure should be recognized and minor problems corrected.

The oil and generator lights could burn out leaving the driver without a true signal of oil pressure or generator operation.

The starter may be damaged if it is engaged while the engine is running.

If the starter properly cranks the engine, but the engine will not start, one of the following may be the reason: Insufficient gasoline, flooded engine, vapor lock or frozen fuel line, improper choking, a wet ignition system, or more serious mechanical difficulties requiring a mechanic's services. When the starter makes no sound or turns very slowly, the problem could be improper positioning of the gearshift lever, a battery without sufficient power or poor connections at the battery cable, the weight of the engine oil is too heavy, or more serious mechanical difficulties.

The smell of gasoline indicates the engine is flooded. To correct the situation the accelerator should be depressed while the starter is turning the engine. This allows the correct mixture to enter the engine while the over-rich mixture escapes through the exhaust.

PURPOSE: To enable the student to accelerate smoothly and safely from a standing position.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Manual Shift			When shifting into first gear, the student will depress the accelerator enough to prevent the engine from stalling or racing as the car begins to move slowly forward.	The student will perform the following sequence of behaviors in a manual shift car: Shift into first gear ● Place hand on gearshift lever and depress clutch pedal. ● Place gearshift lever in first gear position. ● Release parking brake if starting from a parked position. ● Depress accelerator slightly while simultaneously releasing the clutch pedal slowly to the friction point. ● Release clutch completely and depress accelerator pedal until car gains adequate speed to shift to second gear. Shift into second gear ● Depress clutch completely and remove foot from accelerator pedal. ● Move gearshift lever to second gear position. ● Simultaneously release clutch pedal and depress accelerator pedal as in shifting into first gear. ● After clutch pedal is completely released, continue to accelerate until car gains adequate speed to shift into third gear. Shift into third gear ● Place hand on gearshift lever, depress clutch pedal, and release accelerator pedal. ● Move gearshift lever into third gear position. ● Release clutch pedal and depress accelerator pedal simultaneously. ● After the clutch pedal is completely released, depress the accelerator pedal slightly to reach desired speed.	
Automatic Shift				The student will perform the following behaviors sequentially in an automatic shift car: Automatic shift ● Place foot on brake pedal. ● Place gear selector in "drive" position. ● Release parking brake if starting from a parked position.	

				● Gradually ease pressure on brake pedal and gently depress accelerator. ● Release brake pedal completely and depress accelerator pedal slightly to reach desired speed.	
Small Precise Movements			When driving an automatic shift car, the student may use brake pedal pressure to control movement of the car when small precise movements are required.	When driving a manual shift car, the student may vary pressure on the clutch pedal to control movement of the car when small precise movements are required.	

KNOWLEDGES

The student must know how to use the gearshift when accelerating.

The procedures are somewhat more complex in the manual shift car.

In an automatic transmission car the student is required to shift from the "neutral" or "park" position to the "drive" position.

The location of the gearshift can vary in both automatic and manual shift cars. In either type, gearshifts can be located on the steering column or on the floor.

In manual shift cars the number of gears, the function of each, and the shifting pattern affect a driver's ability to shift smoothly.

The proper sequence for shifting gears contributes to a smooth gain in speed.

There are variations in the shifting patterns of three- and four-speed transmissions. The student should know these variations.

The accelerator pedal controls the amount of the gasoline-air mixture that enters the engine and regulates car speed. If fuel is fed too late or after the friction point is reached, the engine lacks sufficient speed and power to pull the car, which results in a series of slow bumpy jerks. The engine may even stall.

Releasing the clutch slowly to the friction point in the manual shift car enhances smooth acceleration if the accelerator is depressed slightly at the same time.

While cars differ in the speed required before shifting to second gear, a speed of about eight miles per hour will be enough for the car to run on momentum when the clutch is disengaged and to permit smooth shifting.

A speed of 15 to 20 miles per hour is required to carry the car on momentum while the engine is disengaged and to keep the engine from laboring when it first moves the car in high gear.

Since the car spends only a few seconds in first and second gears it is more convenient to keep the left foot poised above, and not depressing, the clutch pedal until shifting is completed.

Once the car is in high gear, the left foot should be moved away from the clutch to avoid "riding" it, which is damaging in high gear. "Riding the clutch" in other gears can be damaging also if it is done for a long period of time.

When driving in a car with automatic transmission, the student should know the gear ratio range.

In general, the drive position provides an adequate range of gear ratios in most traffic situations.

Some of the more powerful cars have more than one drive setting.

In some cars one of the drive positions provides a lower gear ratio for use in heavy traffic and for mountain driving, and also provides engine braking power on long steep downgrades.

Depressing the brake before shifting into a drive position in an automatic shift car prevents the car from lurching.

The vehicle's acceleration capability is important.

Engine power and gear selection are major determinants of this capability.

Other factors that affect acceleration are the traction of the drive wheels, the way the driver uses the accelerator pedal, and the driver's selection of the proper gear range.

While acceleration is affected by these factors, the rate of acceleration itself affects gas consumption. The greater the rate of acceleration, the greater the amount of gas that is consumed.

SKILLS

To accelerate smoothly in a manual shift car, a driver must coordinate the release of the clutch pedal to the friction point with his left foot with the depression of the accelerator slightly with his right foot.

Skill in hand and foot coordination is essential in order to shift gears noiselessly and smoothly.

PURPOSE: To enable the student to start a car on an upgrade and on a downgrade from a standing position.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Starting a Manual Shift Car			PROCEDURES FOR STARTING A MANUAL SHIFT CAR ON A HILL The student will: ● Depress the brake pedal and set the parking brake. ● Place the gearshift lever in first or low gear position. ● On an upgrade: ● ● Release the brake pedal and depress the accelerator pedal to increase the engine's speed. ● ● Release the clutch pedal to the friction point, simultaneously releasing the parking brake as the clutch takes hold. ● ● Release the clutch pedal completely and depress the accelerator pedal until the car gains adequate speed to shift into second gear. ● On a downgrade: ● ● Release the parking brake. ● ● Ease off the brake pedal. ● ● Gradually release the clutch pedal all the way and accelerate.		
Starting an Automatic Shift Car			PROCEDURES FOR STARTING AN AUTOMATIC SHIFT CAR ON A HILL The student will: ● Depress the brake pedal and set the parking brake. ● Place the gearshift lever in drive (or low if on a steep upgrade.) ● On an upgrade: ● ● Depress the accelerator pedal. ● ● Release the parking brake. ● ● Simultaneously release the brake pedal gradually and depress the accelerator pedal to obtain smooth forward movement of the car. ● On a downgrade: ● ● Release the parking brake. ● ● Ease off the brake pedal and accelerate.		

KNOWLEDGES

The student must know the procedures for starting the car from a stationary position on a downgrade and on an upgrade. The roles of the brake and clutch take on greater significance when on a hill because of the tendency of the car to roll towards the bottom of the hill. The use of each is critical to the safety of the car, driver, other vehicles, property, and pedestrians.

SKILLS

The student must be able to coordinate brake, clutch, and accelerator in starting a manual shift car on a hill. When driving a car with automatic transmission, the ability to release the brake and depress the accelerator properly must be developed. The procedure must be done in a manner that prevents the car from initially rolling backwards and at the same time effects a smooth forward movement.

PURPOSE: To enable the student to maintain proper position in required lane.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Grasping Steering Wheel		Under normal driving circumstances the student grasps the upper half of the steering wheel in order to maintain directional control.	While driving, the student will grasp the steering wheel rim firmly with both hands.		
Correcting Direction Errors		The student will decrease the amount of steering correction as car speed increases.	When making steering corrections the student will do so gradually, avoiding abrupt steering movements.		
Maintaining Lane Position		The student will maintain position in the center of the lane by looking ahead along the middle of the lane. When driving on a roadway in the presence of oncoming traffic he will keep to the right to minimize the possibility of a head-on collision.			

KNOWLEDGES

The student must know that even on a straight roadway the proper position of a car will not be maintained unless he is looking ahead, observing and recognizing movements away from the desired path, and continuously correcting any deviations from that path.

The importance of focusing well ahead is supported by accident data. Failure to focus well ahead to maintain the car within lane boundaries was noted as a principal cause in a number of the accident reports reviewed.

Keeping the eyes focused well ahead aids in the recognition of approaching hazards and helps the driver in selecting a safe path.

Focusing ahead aids in steering the car smoothly.

Constant eye movement is also necessary. It not only prevents the fixed stare, but also enables the student to be continually aware of his relationship to the roadway.

When driving down a roadway, the driver perceives the car's path angle, that is, the direction the car is moving, and observes the direction and velocity of surrounding objects across the visual field; objects directly along the path angle do not appear to move.

When the path is not aligned with the roadway as identified by road edges, lane markings, and so forth, a steering correction is applied to make the two coincide.

Individual preferences for steering cues such as lane markings and road edges exist. Some drivers use both of these cues, preferring one or the other at different times.

Steering techniques that will aid the student to drive safely are:

Placing the hands on the upper half of the steering wheel:

Allows large and rapid wheel displacements by keeping elbows free of the body.

Causes an automatic corrective steering input whenever the car accelerates laterally.

The 10 o'clock and 2 o'clock hand position on the steering wheel permits maximum use of the top half of the wheel and maximum application of strength to offset wheel pull from blowouts or soft shoulders. While the 10 and 2 o'clock position is basic, almost continuous hand movement is necessary to control the steering wheel.

Oversteering at high speeds was noted as the cause in a moderately high percentage of the accident reports reviewed.

The greater the separation from oncoming traffic, the less likely is the occurrence of a head-on collision if an oncoming vehicle enters the driver's lane.

When the lane is bordered on both sides by objects the driver should keep close to the objects on the left side. Doing so puts the minimum clearance where the driver is able to assess clearance most accurately.

SKILLS

The student must develop the ability to accurately perceive any lateral deviation from the desired path and to make smooth steering corrections with a minimum amount of reversals. He must be able to scan off-road movements as a matter of habit while concentrating on the roadway well ahead. Focusing about eight to 12 seconds ahead is necessary in order to anticipate required steering corrections early enough to make them smoothly.

NORMATIVE INFORMATION

Drivers have a tendency to steer closer to the center of a two-lane road as speed increases. A difference of slightly over one foot existed between 25 and 60 miles per hour.

The minimum amount of deviation from a desired path that is detectable appears to be about 3½ inches. The average driver fluctuates about 1½ feet either side of his average position.

PURPOSE: To enable the student to make a safe, comfortable turn.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing to Turn		The student will prepare for a turn well in advance, by observing intended path for traffic, pedestrians, regulatory and other roadside signs, and pavement markings. He will signal his intention to make a turn at an appropriate point in advance of the turn. ● He will activate the directional turn signal by pressing the lever down for a left turn and lifting the lever up for a right turn. He will observe responses of other vehicles to signals. He will reduce speed depending upon sharpness of the turn in order to achieve a safe and comfortable turn.	If it is necessary to shift gears the student will shift prior to the turn, with both hands on the steering wheel while turning, and the foot free for braking if necessary. The student will use the hand signal to alert other drivers of his intention to turn when the directional signal is inoperative. In so doing he will: ● Extend his left arm and hand straight out for a left turn. ● Extend his left arm out with arm bent straight up at elbow for a right turn.		
Turning		In turning, the student will rotate the top of the steering wheel in the direction of the turn in approximate proportion to the sharpness of the required turn. He will make continual steering adjustments in order to stay on the intended path.	The student will use the hand-over-hand technique in turning, in proportion to the degree of the turn, keeping both hands on the outside of the steering wheel rim when turning. When making a right hand turn he will: ● Place the left hand on the left side of steering wheel between 8 and 10 o'clock position. ● Rotate the steering wheel clockwise, with the left hand to the 2 to 4 o'clock position. ● Place the right hand between the 8 to 10 o'clock position and move the hand clockwise to the 2 to 4 o'clock position. ● Repeat the procedure until the desired turn state is achieved. ● For a left hand turn the student will reverse the above procedure.		
Completing the Turn		As the end of the turn is approached, the student will rotate the wheel in the opposite direction at a rate which will place it in the neutral "straight ahead" position as the desired direction is attained.	While in the process of straightening the wheel in order to complete a turn the student may permit the wheel to slip through his hands if: ● The car speed is slow, but not so slow that the wheel will not slip back to the straight ahead position. ● The distance through which he will drive through the turn is long. ● The car does not have power steering.		

			When wheel is returning by slipping the student will place his palms on the outside of the steering wheel, grasping it slightly and being ready to grasp the wheel firmly to maintain control of the car direction if necessary.		
After Completing the Turn		Once the turn is completed, the student will resume posted speed, if traffic conditions permit.	After completing the turn, the student will make sure the turn signal indicator has been cancelled.		

KNOWLEDGES

The student must know that he should signal his intention to turn to other drivers or pedestrians in the area.

Signalling is accomplished by lifting or depressing the directional turn signal lever which is usually mounted on the left side of the steering column just below the steering wheel.

When the directional signal is activated, the indicator lights on the panel flash on and off in unison with the external turn signal lights.

Most cars are equipped with an automatic cancellation mechanism that will deactivate the turn signals after the turn is completed. However, frequently a turn is not sharp enough to activate the automatic cancellation device and the turn signals will keep blinking after the turn is completed. The driver should look at his panel after completing the turn and if the signal remains activated, he should return the signal lever to the neutral position to deactivate the signal.

The driver should slow down to a safe speed before entering the turn, since an attempt to reduce speed in the turn may throw the car into a skid.

Even though he is turning, the driver should continue to look at least five seconds ahead, and preferably as much as eight to 12 seconds ahead.

The driver should remain as upright as possible since to do so improves his perception of the roadway and its rate of curvature.

The driver should avoid shifting gears while in a turn in order that he may concentrate his attention on the turn, keep both hands on the steering wheel, and have his foot ready to brake if necessary.

The hand-over-hand technique allows the wheel to be turned quickly while maintaining strong positive control. One-hand turns are slower and tend to result in a wide turn. Reaching inside the wheel is an awkward practice and the hand will occasionally hit the horn ring or inside the steering wheel.

Both hands should be used to straighten the wheel upon completion of the turn. If the hand is taken off the wheel, the driver could lose control if the car strikes a rut, hole, or other object.

SKILLS

The student must be able to:

Perceive a disparity between his intended path and the car's existing path angle. Judge the rate at which to turn his steering wheel in order to align his car's path angle with the intended path at any particular rate of speed. This process continues throughout the turn. As the intended path assumes a straight line, the driver will have to turn his wheel back to the neutral position in order to achieve the desired path angle.

Judge the maximum speed at which he can make the necessary steering corrections without discomfort or placing the car in a skid.

PURPOSE: To enable the student to adjust speed to existing traffic conditions to account for variations in traffic flow and legal speed limits.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Maintaining Constant Speed		The student will adjust the speed to that of the traffic flow. The student will periodically observe the speedometer to check speed, especially when there is a change in the legal limit.	The student will make slight changes in accelerator pressure to maintain constant speed and will avoid speeding up or slowing down abruptly. He will avoid fluctuations in speed when not necessitated by traffic situations.		

KNOWLEDGES

The student must know that speed may not necessarily be the cause of many accidents but it is a complicating factor. High speed attends a disproportionately high percentage of accident casualties, aggravates crash severity, and is associated with increasing the fatality rate.

Speeding drivers were involved in over 26% of the accident reports recently reviewed.

In one year, 39% of traffic fatalities were caused by exceeding the speed limit.

A recent survey showed that 15.9% of all accidents resulted from driving too fast. Earlier information indicates the driver was speeding in 39% of nonfatal accidents and in 49% of fatal accidents.

A study done by the Bureau of Public Roads indicates the safest speed is usually the average speed of all vehicles on a particular stretch of road. The likelihood of a car being involved in an accident is directly related to its deviation from the average speed of travel, whether it is going faster or slower than other vehicles in traffic.

High speed can be especially dangerous because of its effects upon the driver.

A driver tends to adapt to high speed after 15 to 20 minutes and therefore underestimates his speed.

When he is required to reduce speed (e.g., when entering a speed zone or leaving a freeway), the result of his underestimation is to exceed the established limit.

Selecting the proper speed is the primary implement in dealing with highway hazards.

With increases in speed, the time available for identifying, making decisions and carrying out those decisions decreases.

Speed adjustment and maintenance of a relatively constant speed are dependent upon road condition, rapid changes in weather conditions, the driver's condition, and the car's condition.

The driver who frequently drops down to 25 to 30 miles per hour for no reason and then accelerates to 45 to 50 miles per hour uses more gasoline than one who drives steadily at 40 to 50 miles per hour.

Maintaining the speed of traffic flow prevents traffic bunching up behind the car, thus impeding traffic flow.

Objects, obstructions, and pedestrian or vehicle traffic on or near the intended path of the vehicle can create a hazardous situation which the driver must reckon with by speed and/or direction adjustment.

SKILLS

The driver's ability to judge speed without seeing the speedometer is dependent upon visual movement of objects across the retina, particularly in the periphery (when looking ahead), kinesthetic perceptions (e.g., road vibration), and auditory perceptions (e.g., rushing air, tire hum, engine noise, and auto body noises).

NORMATIVE INFORMATION

Drivers appear to be capable of detecting speed changes of about 5 miles per hour and also average about a 5 mile-per-hour error in estimating speed. There is a tendency to underestimate at lower speeds or when attempting to slow down, and to overestimate when accelerating.

PURPOSE: To enable the student to downshift to maintain speed or reduce speed, before starting down a hill, in heavy, slow-moving traffic, or in emergency situations.

CATEGORY	HIGH	MODERATELY HIGH	MODERATE	MODERATE LOW	LOW
Automatic Shift			When downshifting in an automatic shift car the student will: ● Remove his foot from the accelerator. ● Place the gearshift lever in the next lower gear range. ● Depress the accelerator to maintain desired speed.		
Manual Shift				When downshifting in a manual shift car the student will: ● Remove his foot from the accelerator. ● Move the gearshift lever to the next lower gear. ● Depress the accelerator slightly and release the clutch gradually. ● ● Increase accelerator pressure if slowing down is too rapid. ● Release the clutch completely and apply sufficient accelerator pressure to maintain desired speed.	

KNOWLEDGES

The student must know the importance of being able to downshift correctly, at the proper time.

Downshifting is practical when attempting to maintain or reduce speed when driving downhill, in slow, heavy traffic, or in emergency situations. It is also appropriate when the engine is laboring.

Speed should be reduced to below 30 miles per hour when downshifting with automatic transmissions from the drive position to the next lower range.

Downshifting to second gear should be accomplished before starting down a hill, and usually only when the car speed is reduced to 15 or 20 miles per hour.

Downshifting to first gear should be avoided since in most cars first gear is not designed to mesh while the car is moving. Downshifting to first gear could damage the gears.

Downshifting should be avoided at high speeds because there is a greater tendency for the rear wheels to slide if the surface is slippery. Downshifting is hard on the car at moderate speeds, and even harder at high speeds.

SKILLS

The student must develop coordination of use of the clutch, accelerator, and gear shift lever when downshifting in a manual shift car.

PURPOSE: To enable the student to come to a normal safe stop on level roadways and on hills and to make required rapid stops.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing for Normal Stop		The student will check the rearview mirror for following traffic when preparing to stop. If possible he will give the hand signal before slowing down by extending the left arm from the window and lowering the arm to approximately a 45 degree angle from the horizontal. In order to come to a smooth comfortable stop he will begin to slow down well before the point at which he wishes to come to a complete stop. He will depress the brake more firmly if not slowing quickly enough, or will ease the brake pedal pressure slightly and depress it again if slowing too quickly.	When preparing to stop the student will cover the brake by placing either foot squarely on the brake pedal and depressing it slightly to activate the brake lights. When slowing down he will remove his foot from the accelerator and depress the brake pedal gradually, being especially careful in the application of power brakes.		
Stopping			When stopping, the student will allow a safety margin between the front of the car and the vehicle ahead.	The student will depress the clutch before the brake when stopping in first or second gear in a manual shift car.	
After Stopping		After stopping the student will keep firm pressure on the brake pedal in order to remain stopped.		If a stop is expected to be more than a few moments, the student will shift into neutral, release the clutch in a manual shift car, and apply the parking brake or maintain the brake pressure.	
Stopped on a Hill			When stopped on an upgrade the student will allow extra headway between the car and the vehicle ahead.	When stopped on a hill in a manual shift car the student will apply the parking brake.	

Making Rapid Stops		The student will signal the traffic behind, if time permits, by tapping the brake several times to flash the brake light. For a rapid stop on a dry pavement the student will apply the brake firmly and evenly unless the available stopping distance is very limited, in which case he will apply a series of short jabs on the brake. If the car begins to skid, the student will release the brake momentarily and will apply the brake somewhat less firmly. For a rapid stop on wet pavement, snow, ice, or loose gravel the student will apply a series of pumping motions on the brake pedal.			

KNOWLEDGES

The student must know the importance of proper braking technique in reducing accidents, increasing comfort, and extending the service life of the brakes and tires.

Proper signals to following traffic must be given prior to brake application.

A hand signal should be given under the following conditions:

In bumper-to-bumper traffic where taillights may not be observable or the attention arousal of a hand signal would be advantageous.

If the car's stop lights are inoperable.

Where a hand signal is required by law.

Tapping the brake lightly to flash the brake lights increases their attention arousal and is advantageous whenever a sudden stop is required.

Braking may be accomplished by using either the right or left foot. The right foot braking is the more common method and is generally employed in instructing new drivers.

Left foot braking reduces slightly the time required to apply the brake. However, it also may result in (a) simultaneous application of brake and accelerator, (b) "riding" the brake thus causing the brake lights to go on and creating additional wear on brake linings.

Right foot braking separates accelerator and brake pedal application, reducing the chance that the two would be applied simultaneously in an emergency.

The student must know the distance required to come to a stop at various initial speeds.

Under the best of conditions, the following distances apply:

Twenty mph–2 to 3 car lengths

Forty mph–7 to 9 car lengths

Sixty mph–15 to 17 car lengths

Stopping distances would be increased by any of the following:

Worn tires

Worn brake linings or other brake deterioration

Slippery road surface

Down-hill grade

Power brakes require less effort but do not reduce stopping distance. They are potentially dangerous in that they may:

Create a false sense of security.

Cause over-application of brakes on wet or icy pavement.

The student must know the importance of proper braking procedure to safe, comfortable stops.

Applying the brake before depressing the clutch allows engine braking to augment that supplied by the brakes.

The clutch must be depressed before the car comes to a stop in order to avoid stalling the engine.

Easing up on the brake pedal just before coming to a full stop avoids a jolting stop.

Stopping several yards behind the car ahead provides a safety margin in case the car is struck from the rear. On a hill it reduces the likelihood of being struck by the car ahead in the event it should roll backwards in attempting to start.

Shifting into neutral for a prolonged stop eliminates the chance of the car lurching forward should the foot slip off the clutch pedal.

The student must know not only the procedure for making a rapid stop but the potential hazard involved in braking sharply enough to lock the wheels and produce a skid (see "Skid Control").

SKILLS

The student must be able to:

Judge the appropriate point at which to initiate stopping so as to come to a safe, smooth stop yet not delay traffic unnecessarily.

Make a normal stop by applying the brake sufficiently to produce maximum deceleration without discomfort, or excessive wear to tires or brake linings.

Make a rapid stop by applying brakes sufficiently to produce maximum deceleration without locking the wheels and putting the car in skid.

Make an emergency stop by rapidly pumping (slippery pavement) or "jabbing" (dry surface) the brake pedal (see "Skid Control").

NORMATIVE INFORMATION

A deceleration of .2 to .3 g appears to constitute a "normal" stop.

Left foot brake application occurs about 1/5 of a second faster than right foot brake application.

PURPOSE: To enable the student to back up safely and smoothly.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing to Back		The student will prepare to back up by assuming a body position which will permit a good view of traffic conditions to the rear of the car. In doing so he will: ● Look to the rear over both shoulders for vehicles, pedestrians, other road users, and obstructions. ● Turn the upper body to face the right side of the car and turn the head to look out the rear window.		The student will release the parking brake completely if it is set before attempting to back up.	
Manual Shift—Backing and Stopping			After checking the traffic situation, and just prior to assuming the correct body position, the student will shift into reverse gear. He will do so by placing his hand on the gearshift lever, depressing the clutch, and placing the gearshift lever into reverse position in a manual shift car. He will control car speed by moving the right foot from the brake to the accelerator. He will then depress the accelerator slightly while simultaneously releasing the clutch pedal slowly to the friction point.	The student will depress and release the clutch pedal when attempting to control car speed for short backward movements in a manual shift car. He will release the clutch pedal, regulate the speed by depressing the accelerator, and will keep his foot on the clutch in preparation for a sudden stop during extended backward movements.	

				When stopping, he will use the following procedure: ● Depress clutch and immediately release accelerator. ● Depress brake. ● Shift from reverse to neutral position.	
Automatic Shift—Backing and Stopping				When shifting into reverse in an automatic shift car the student will place his foot on the brake and place the selector in the "R" position. When backing up he will depress the accelerator slightly and may use the left foot on the brake to control speed for small precise maneuvers. When stopping he will use the following procedure: ● Depress brake. ● Place selector from "R" to "N" position. The student will make sure that the car is completely stopped before shifting into forward gear.	
Turning While Backing		The student will drive slowly when making a turn while backing up.	The student will avoid quick steering corrections when backing up. When making turns while backing up, the student will position the body so as to see in the direction of the turn: ● If the rear of the car is to turn toward the right side the student will remain in the position described for preparing to back up. ● If the rear of the car is to turn toward the left side look over the left shoulder.		The student will turn the top of the steering wheel to the side the rear of the car is to move.

KNOWLEDGES

The student must know the procedures, laws, and precautions that pertain to backing up.

State regulations regarding backing up on roadways vary. Generally, backing up is permitted as long as it does not interfere with other traffic. One state prohibits all backing except to leave a parked position.

All states prohibit backing on freeways.

In general, backing should be avoided when doing so would interfere with the flow of traffic.

Accident data reveal that:

A large percentage of chargeable accidents occur during backing movements.

A recent survey of accident reports has shown that a moderately high proportion of the accidents occurred while drivers were entering or leaving a parking space or travelling on a parking lot. A majority of these accidents were attributed to a failure to check to the rear for parked or moving vehicles prior to backing out of a parking space.

In order to back safely, the student should know:

Blind spots exist to the rear of the car. Pedestrians are not used to cars moving backwards and may fail to get out of the car's path.

Looking directly back through the rear window reduces the chances of hitting a pedestrian and of overlooking something coming from either side.

Putting the head out the left side window gives a good view along the left side of the car, but renders the driver completely blind to anything directly behind.

Opening the door to look back is hazardous and may cause injury to driver or damage to the car.

Grasping the steering wheel at the top gives the most control with the least amount of effort.

Steering corrections when backing must be gradual and smooth to avoid possible loss of control of the car.

An allowance for a greater stopping distance when the car is in reverse than when it is in drive is necessary because many car brakes are less efficient in stopping in reverse. Greater pressure on the brake pedal is also required. Generally, a slow speed while in reverse is preferred to prevent loss of control.

Holding the accelerator steady and controlling the reverse speed of the car with the clutch from the friction point avoids the tendency to feed gas too quickly. This method also compensates for the error of releasing the accelerator too suddenly.

SKILLS

The student must be able to:

Decide upon a safe speed based upon traffic conditions, the presence of pedestrians to the rear, and the presence of objects to the rear when backing.

Coordinate steering and speed while looking to the rear by developing foot, hand, and eye coordination.

When driving a car with a standard transmission develop the ability to control car speed in reverse by depressing and releasing the clutch pedal.

If driving a car with automatic transmission, ability to control speed by using the brake pedal must be developed.

PURPOSE: To enable the student to prevent and stop a skid.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preventive Measures	The student will take the following preventive measures in an effort to avoid skids: Avoid abrupt changes in car velocity or direction when driving on slippery surfaces. Avoid panic stops and hard braking if possible.	The student will enter curves or turns at moderate speeds to reduce the chances of a skid.			
Stopping a Skid	The student will keep his foot off the brake pedal so that wheels will not lock when first attempting to stop a skid.	When attempting to stop a skid the student will gradually release pressure on the accelerator pedal and if in a manual shift car depress the clutch.			
Counter-steering	The student will countersteer to correct the skid by immediately turning the wheels in the desired direction of travel.	The student will continue to countersteer to correct for the skid. In doing so he will: ● Turn the wheel in the opposite direction as the desired direction is neared. ● Straighten the wheel just before reaching the desired direction. ● Make repeated corrections as necessary.			
Slowing Down	The student will slow down on slippery surfaces, by applying brake pedal pressure in a series of firm gentle pumping motions.	The student will apply brakes only after steering control is reestablished and when, or just before, the car is properly aligned. He will slow down on dry surfaces by applying brake pedal pressure in a series of quick hard jabs. He will continue to slow down until the car is traveling at a speed that is safe for the road conditions.			

KNOWLEDGES

The student must know the factors responsible for skidding, the methods that minimize the chances of going into a skid, and the corrective action to take if the car begins to skid.

The chances of skidding can be reduced if care is exercised when driving on roadways covered with snow, ice, oil, water, or other material that tends to reduce the road surface friction. Curves and turns should be entered at a moderate rate of speed and deceleration should be gradual and smooth in order to minimize the chances of skidding.

In addition to driving carefully, car maintenance can play a role in avoiding or minimizing the probability of skidding. Tread design variation in tires, unequal front wheel alignment, and bald or badly worn tires contribute to skidding.

Although precautions may be taken and preventive maintenance performed regularly, there is no guarantee that the driver will be able to avoid going into a skid. Consequently, it is important to know the procedures to be employed to regain control of the car. These procedures are shown in the performance objectives. When attempting to arrest a skid the brakes should not be applied immediately. Applying the brakes increases the probability of locking the wheels. If the front wheels are locked, steering control will be lost and the car will slide in a straight line regardless of the position of the wheels. Even if the wheels do not lock when the brakes are applied, the braking action will result in a weight transfer to the front end of the car concurrent with a weight reduction in the rear end. These weight changes increase the chances of spinning out.

Lifting the foot off the accelerator suddenly can produce a similar effect to braking since when doing so, the braking power of the engine is suddenly applied.

In order to prevent skidding in the opposite direction during a skid the wheels should be straightened just before reaching the desired heading. The inability to countersteer was noted in a moderately high proportion of the accident reports that were reviewed.

SKILLS

In order to *avoid* a skid, the driver must be able to adjust his braking and rate of turn to his initial speed and road surface conditions (see "Stopping" and "Turning").

In order to *control* a skid, the driver must be able to execute the following series of responses with precise movement and timing and yet essentially automatically owing to the speed with which they must occur and the stress under which they take place:

Avoid applying the brake at all until the car has assumed the intended path angle (i.e., while it is skidding sideways).

Turn the steering wheel in the direction he wishes the car to go—the intended path angle.

Turn the wheel in the opposite direction just before the desired path angle is attained in order to stop the car's rotation and to prevent "overshoot" (continuing to rotate beyond desired path angle).

Return the wheel to the straight ahead position just as the desired path angle is attained.

Make the above steering corrections no greater than is necessary in order to prevent large angular velocities (rate of rotation) causing total loss of control.

Stopping the car or slowing to a controllable velocity by pumping (slippery surface) or stabbing (dry surface) the brakes once the car is on the desired path angle.

Steering around any obstacle limiting the rate of turn and brake application so as to avoid producing another skid.

PURPOSE: To enable the student to maintain a complete and accurate understanding of the driving environment and to identify any critical changes that might affect his driving.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General-Visual	The student will continuously scan the surroundings on and off the roadway by shifting his gaze frequently.	The student will look well ahead in the lane and adjust the distance at which he focuses to take account of the car's speed and the environment surrounding the roadway. In doing so, he will: ● Focus at farther distances as he increases speed. ● View the road ahead one full block in urban areas. ● View the road ahead about one-half mile in rural areas.	The student will avoid fixating on the road surface immediately to the front of the car's hood.		
General-Auditory			The student will attempt to identify sources of unusual sounds, including the sounds of emergency vehicles, screeching tires, horns, and whistles. In doing so he will: ● Look in the direction from which the noise comes, through the mirrors if the sound is from the rear. ● Lower the volume of the radio and open the window to hear the noise better. Generally, he will minimize the noise level within the car to improve the detection of unusual sounds, particularly warning signals.		
General-Olfactory			When attempting to determine whether the source of an odor is external or internal to the car, the student will: ● Look for indications of external origin, such as smoke,		

			exhaust from a vehicle ahead, or an industrial operation. ● Look for indications of internal origin. In doing so, he will: ● ● Manually check the parking brake to make sure it is released completely. ● ● Observe the temperature gauge for signs of overheating. ● ● Observe the oil pressure gauge for signs of abnormal pressure. ● ● Glance at the ashtray. If an odor persists and appears to be internal to the car, he will stop the car off the roadway to examine the inside thoroughly, as well as the wheels, and under the hood.		
Traffic		In surveying the traffic, the student will: ● Respond promptly to a situation that attracts his attention so that his eyes can move again after a few seconds. ● Observe parked and moving vehicles ahead, to include cycles possibly obscured by larger vehicles. ● Observe traffic from the side, including vehicles approaching from cross streets and those moving in the same direction in adjacent lanes. ● Watch other drivers on the road for clues to how they operate and identify those whose actions will be hard to anticipate, including drivers who: ● ● Frequently change lanes. ● ● Frequently change speeds. ● ● Consistently fail to signal prior to a maneuver. ● ● Stop suddenly without an emergency requirement.	The student will keep the traffic behind under surveillance by glancing at the rearview and side mirrors frequently.		

(Continued)

PURPOSE: To enable the student to maintain a complete and accurate understanding of the driving environment and to identify any critical changes that might affect his driving *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Traffic Controls		The student will observe all official road signs, which provide warnings, information, and regulations, and respond accordingly, for example, check that the car is moving within the posted speed limit. He will observe traffic lights well in advance to be prepared to respond as required.	In urban areas, the student will observe a string of traffic lights for several blocks. He will observe the pavement markings to note: ● Whether the center line and lane lines are solid or broken because they control lane changing and passing maneuvers. ● Arrows or wording designating lane restrictions such as turning lanes, through traffic lanes, and slow traffic lanes, to make sure the car is positioned in the correct lane.		
Within The Car		When talking to a passenger, the student will continue to look toward the roadway, not toward the passenger.	The student will react to anything within the car that could adversely affect his driving performance. For example, he will: ● Ventilate the car interior when heat or cigarette smoke is excessive. ● Avoid distractions from passenger conversation or activity. ● Avoid engaging in conversation when in traffic.	The student will look at the instrument panel displays regularly to keep abreast of the car's operating status. In doing so, he will: ● Monitor the speedometer to determine the car's speed. ● Observe the fuel gauge to determine the level of gasoline in the fuel tank. ● Monitor the temperature gauge for signs of overheating. ● Observe the oil pressure gauge for signs of abnormal pressure. ● Observe the ammeter to determine whether the battery is discharging or being charged. He will take note of any unusual performance in the car's operation as detected through hearing, seeing, smelling, or feeling.	He may adjust the temperature control for comfort.

KNOWLEDGES

The student must know how to gather critical driving information.

The driver who keeps abreast of the driving situation by continuous surveillance of traffic, traffic controls, his car's operating status, and the surrounding environment will be more likely to recognize hazards while there is still time to avoid them.

Failure to recognize hazards in time is the chief cause of accidents.

The driver receives the vast majority of the information he uses through his eyes. The eyes should be shifted frequently to avoid their freezing on one conflict while another is missed. In a moderately high number of accident reports reviewed, the driver's attention was diverted to other aspects of the traffic scene just prior to the accident. Also, the more intently a driver fixes his central vision on a particular object, the less aware he will be of sensations from his larger field of indirect vision.

A loud radio, inattention, and misinterpretation of traffic sounds have caused drivers to react late to auditory clues of an impending crash. The National Safety Council reported 12,000 accidents involving emergency vehicles in 1968, the majority of which were due to the failure of drivers to hear the warning signals.

Every official traffic control device (sign, lane marking, light) has a particular meaning.

Recognition of abnormal car operation and, if possible, immediate correction of difficulties may help to avoid the inconvenience of a breakdown or the risk of an accident.

Conversation or activity with or among passengers may be distracting and reduce the quality of the driving performance. Such distractions were cited as primary or contributing causes in over 6% of the accident reports reviewed. In a study of one-car accidents, 10% resulted from passenger distractions.

SKILLS

The student must:

Develop the visual surveillance habit of scanning 360° around the car.

Develop coordination between control movements and eye movements.

Be able to use peripheral vision for lateral control.

Develop the ability to recognize hazards in time to avoid them.

NORMATIVE INFORMATION

Safe drivers tend to assure themselves of information 8 to 12 seconds ahead. The smallest lead time experienced drivers tend to allow is 1 3/4 seconds.

Even after several months, new drivers tend to spend more time monitoring the road straight ahead than experienced drivers.

PURPOSE: To enable the student to drive safely in an urban area and react appropriately to pedestrians and to other traffic.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		The student will minimize distractions from outside the car by checking for traffic lights which may be "embedded" in light from neon lights, by avoiding sightseeing, and by ignoring activities on the sidewalk not relevant to driving. He will look for signs and pavement markings restricting use of lanes, turning, and direction of movement. (See Educational Objective on "Surveillance")	When driving, the student will minimize distractions within the car by conversing little, if at all, with passengers. He will drive slowly and evenly, pacing speed to the progressive light system, avoiding "hurry up and wait" actions from intersection to intersection. The student will drive in the lane which provides best movement and visibility. (See Educational Objective on Lane Usage)	If the student has the radio on while driving, he will play it at a volume which will not distract him from his driving.	
Commercial Areas		When driving in commercial areas the student will watch for pedestrian traffic, especially during rush and noon hours, and for pedestrian-operated vehicles such as pushcarts and street vendors entering the roadway.	He will watch for vehicles emerging from obscured driveways and alleys.		
Residential Areas	When driving in residential areas, the student will watch for pedestrians and particularly children who may dart into the street.	The student will drive cautiously near schools, playgrounds, and parks.	When driving in a residential area the student will enter a "play street" if his destination is on that street, but will not use any street designated as a "play street" for through movement.		

KNOWLEDGES

The student must know the demands imposed on him when driving in urban areas.

Visual demands on the driver appear to be about three times as much at 20 miles per hour in the city as at 60 miles per hour on a modern divided highway. The mere presence of pedestrians and children increases the surveillance requirements of the driver.

City driving requires about twice as many actions as driving on a four-lane highway.

The increase in demands placed upon the driver in the city is partially due to the greater concentration of other vehicles.

Traffic controls and pedestrian traffic also contribute to making city driving a difficult task.

Accident fatalities and rear-end collisions can be expected to be high in the urban areas as a result of the increase in pedestrian and motor vehicle traffic.

Urban motor vehicle accidents produced 32% of all traffic fatalities in 1968.

Approximately 30% of urban accidents are rear-end collisions.

Special regulations may also exist in urban environments.

Traffic may be limited to one direction on certain streets.

Many cities have one-way streets to improve traffic flow.

Usually, traffic on adjacent parallel streets moves in opposite directions.

Lane restrictions and traffic flow may change during the rush hours in the city.

If unfamiliar with the city, the student must rely upon signs and pavement marking in order to attain such information.

Driving techniques in the city must differ from those on the open road, with the concentration of traffic in the city.

Matching speed to the progressive light system in the city permits travelling several blocks without stopping and enhances traffic flow.

Rapid acceleration followed by sudden stops should be avoided, since it invites rear-end collisions and impedes traffic flow.

SKILLS

The student must have mastered the perceptual-motor skills involved in basic vehicle control (shifting, turning, stopping) to the level that allows them to occur automatically, allowing him to attend to the demands of traffic controls and route signs and other critical facets of the urban environment.

PURPOSE: To enable the student to drive in a safe, efficient manner in open country and mountainous terrain.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Open Highways		When driving on open highways the student will: ● Drive at reduced speeds on winding or narrow roadways, when there are signals at intersections, and when roadside clearance is at a minimum. ● Watch for hidden traffic, pedestrians, or animals obscured from view by roadside structures, trees, or dense vegetation. ● Cross medians only at designated crossovers, using the median only for an emergency stop.	When driving on open highways the student will maintain a position in the center of the lane to allow traffic in adjacent lanes to pass easily.		
Rural Highways		When driving on rural highways the student will adjust speed to that of the traffic. He will adjust his driving to poorer road surface, hills, sharp curves, unmarked intersections, fewer warning signs, more visual obstructions, and slow-moving farm machinery.			
Mountainous Terrain		When driving in mountainous terrain the student will: ● Increase lane separation from oncoming vehicles by steering close to the right edge of the roadway. ● Look for changes in speed limit and for warning signs.	When driving in mountainous terrain, the student will watch for sudden changes in direction, elevation, condition of roadway, and dangers such as rock slides and washouts.		

KNOWLEDGES

The student must know the procedures for driving on open and rural highways as well as in mountainous terrain, for warding off the effects of monotonous driving.

In scenic areas, strict attention must be given to driving. Sightseeing should be avoided.

When driving in mountainous terrain, steering near the right edge of the roadway is advised because an oncoming vehicle may be blown into the car's lane by the wind. Being close to the right edge provides a margin of safety.

Potential accident situations have been identified:

The number of signalized intersections on a multilane highway contributes significantly to an increase in accidents.

There is a positive relationship between the accident rate on freeways and the number of median openings, excluding intersections, on multilane highways.

Speed differential is a major factor in accidents on two-lane rural roads. Both slow-moving and fast-moving vehicles constitute a hazard. Some farm machines have colored "slow moving vehicle" signs attached to the back to warn cars overtaking them.

PURPOSE: To enable the student to safely enter, drive on, and exit from a freeway.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Entering Freeway		When entering the main roadway the student will attain and maintain speed equal to the traffic flow, remaining in the right lane until such speed is attained. He will frequently check the rearview mirror to see if vehicles are closing too fast. If they are closing too fast the car speed is too slow for traffic flow.			
Driving on Freeway	When moving with traffic the student will select a speed on the basis of the posted limit, weather and light conditions, traffic flow, and traffic volume.	When moving with traffic the student will scan the traffic situation and roadway contour well ahead and will observe vehicles surrounding the car. In so doing he will: ● Watch for the driver of a vehicle trapped behind slow moving vehicles suddenly entering the car's lane. ● Observe vehicles in adjacent lane(s) in case the lane is needed for passing or maneuvering. He will be particularly careful when approaching crests and sags or other situations where visibility is decreased.	When moving with traffic the student will periodically check the rearview mirror to determine the location of traffic to the rear. He will drive with special caution when in heavy traffic outbound from urban areas.	The student will check the display panel gauges frequently while driving.	

Interchanges		When approaching and passing interchanges, and if continuing in the right lane, the student will: ● Watch for vehicles slowing down ahead and will slow down if lateral movement of the traffic ahead so demands. ● Watch for a vehicle in the deceleration lane to swing back into right lane at the last minute. The student will drop back if there is another vehicle in the left lane blocking such a maneuver.	When approaching and passing interchanges the student will: ● Move to the passing lane when the direction of movement is in two lanes. ● Move from the right lane to the middle lane when driving on a roadway with three or more lanes.		
Emergency		The student will drive onto the shoulder or median if an emergency arises on the freeway which requires stopping the car.			

KNOWLEDGES

The student must be aware of the potential hazards involved in high-speed freeway travel.

Although freeways are designed to permit safe high-speed travel, a variety of weather, roadway, traffic, and other conditions frequently necessitate a reduction of speed. Almost one-half of freeway accidents have been attributed to cars moving too fast for conditions.

Wet weather. Approximately 20% of freeway accidents occur on wet roadways.

Crests and dips. 35% of freeway accidents occur on crests and dips; the rate of rear-end collisions at these points is approximately one-and-one-half times the rate on other sections.

Entrances and exits. Almost 20% of freeway accidents occurred in the vicinity of entrance and exit ramps.

Rush-hour traffic. Rush-hour traffic on urban expressways results in a relatively high accident rate. The highest rate occurs with outbound traffic because of drivers' late afternoon physical and mental fatigue.

Shoulders. Freeways without shoulders or with shoulders that are unpaved, narrow, or not flush with the roadway have somewhat higher accident rates than freeways with adequate shoulders.

Lane variation. Freeways with lanes varying in number or width are more likely to produce accidents than those that are uniform.

Because of the high rate of travel and the suddenness with which traffic conditions change, the driver must maintain large following distances and be particularly alert to changes in traffic.

Approximately one-half of freeway accidents are rear-end collisions.

Approximately one-fourth of urban expressway accidents result from improper lane changes, that is, "cutting in".

A substantial number of freeway accidents occur when the driver's attention is momentarily distracted.

Because of the high rate of speed that prevails on a freeway, a driver who is operating more than 15 miles under the posted speed limit risks causing an accident.

The driver should be sure his car is in good operating condition before entering a freeway.

A large number of accidents are caused by drivers stopping or backing up on a freeway.

A driver who moves to the middle or left-hand lane when approaching an interchange not only facilitates the safe exit and entry of other cars, but reduces the likelihood that he will have to slow down and thus risk being struck from the rear.

SKILLS

When travelling at high speeds the results of steering wheel motions are greatly magnified. The driver, therefore, must master low-speed and high-speed steering.

PURPOSE: To enable the student to maintain an adequate separation between the car and the vehicle ahead.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Normal Driving	Under normal driving conditions, the student will maintain at least a two-second separation from the vehicle ahead to allow for stopping the car with adequate space between it and the vehicle.				
Increasing Separation	The student will increase the following distance (or time) when driving: ● On icy or wet roadways. ● Under poor visibility conditions.	The student will increase the separation distance: ● When behind any of the following vehicles: ● ● Oversize vehicles that obscure forward visibility. ● ● Vehicles that stop frequently, such as transit and school buses, post office and delivery trucks. ● ● Motorcycles and bicycles. ● ● Erratically driven vehicles. ● During conditions of darkness. ● At locations where traffic intersects, merges, or diverges. ● Where the road ahead is not visible, such as near crests and sags.	The student will increase the distance from lead vehicles that are carrying protruding loads.		
Adjusting Speed	The student will watch for indications of reduced speed by the vehicle ahead, to include: ● More rapid closure of the car on the vehicle. ● Hand signals from the vehicle's driver. ● Activation of the vehicle's brake lights or turn signals.	The student will adjust the car's speed to changes in the speed of the vehicle ahead. ● If the vehicle ahead slows down he will remove his foot from the accelerator to reduce the car's speed. ● If the vehicle stops, he will apply the brakes quickly enough to stop while leaving sufficient space ahead to permit driving around the other vehicle without backing up first. ● If the vehicle turns, he will: ● ● Observe the path of the vehicle to see if the turn can be completed safely. ● ● Prepare to stop quickly if the vehicle aborts the turn or is forced to stop before completing the turn.	He will observe vehicles beyond the one directly in front to detect early traffic situations that will cause a change in speed. If the vehicle ahead slows down, the student will tap the brakes lightly to warn following traffic, and then slow down.		

Observation of Roadway Ahead		The student will observe the configuration of the roadway ahead and expect the vehicle in front to slow down at: ● Uncontrolled intersections. ● Highway entrances, particularly those with short acceleration lanes or located on the left side of the roadway. ● Highway exits, particularly those located on the left side of the roadway or with short deceleration lanes. ● Forks in the road where traffic diverges.			

KNOWLEDGES

The student must know that appropriate and stable following distances maintain safe traffic flow, and certain conditions call for a greater than normal following distance.

Following another vehicle requires a spatial interval of sufficient size for the driver to adjust to unexpected moves by the vehicle ahead or to fluctuations in the traffic ahead without being forced into sudden swerves or stops.

One rule that can be used to maintain a safe following distance is to keep a distance between vehicles that is travelled in at least two seconds.

The two-second separation time interval can be estimated by using the procedure described in the performance section. A traditional rule of thumb has been one car length for every 10 miles per hour of speed.

Some circumstances call for greater following distances.

When increasing speed. As speed increases so does the distance required to come to a stop. To allow for the greater stopping distance, a greater headway between the car and vehicle ahead is needed.

When driving on wet or icy roads, which also increases the stopping distance.

When driving at night or during weather conditions that adversely affect the driver's ability to see roadway and traffic conditions ahead. Vehicles may decelerate sharply during poor visibility. A greater following distance is required to allow a safety cushion for responding to sudden actions by the vehicle(s) ahead.

When fatigued. This causes a person to respond to situations more slowly than when he is fresh. The longer the driver takes to react, the more distance is required to stop the car. To accommodate this poorer perfromance, the driver allows a greater headway from the vehicle in front.

When following emergency vehicles. Most states require a separation of at least 500 feet from emergency vehicles.

When following dual-wheeled vehicles, which may cause damage to the car by the thrust of debris thrown from between the wheels. Also the vehicle's larger size tends to block the view ahead if followed closely.

Following two-wheeled vehicles that can stop within shorter distances than cars for a given speed because of their lighter weight.

Unstable spacing between vehicles adversely affects the flow of following traffic.

Following too closely is a significant factor in accidents. For example:

According to *Accident Facts* for 1969, 11.3% of all accidents were caused by following too closely.

Driver failure to maintain an appropriate interval while following a lead vehicle in traffic was a significant factor in rear-end collisions in a moderately high percentage of accident reports reviewed.

About 30% of city accidents are rear-end collisions. In one year nearly 2,400 involved fatalities.

Rear-end accidents accounted for 70% of all accidents that occurred on freeway crests and dips. Following too closely was cited as the cause of 44% of the rear-end accidents. The visibility distance requirement on freeway crests and sags is greater than the criterion for stopping sight distance on two-lane roads.

SKILLS

The student must be able to attain and maintain an appropriate and stable interval between the car and the vehicle ahead. To do so he will have to perceive changes in the separation distance or apparent vehicle size, depending upon the distance involved, and adjust the car speed to changes in the lead vehicle's speed.

NORMATIVE INFORMATION

Drivers seem to underestimate distance in feet by 30 to 40%, on the average, at highway speeds. In one study, drivers, on the average, were 20% off in attempting to maintain an 80-foot following distance at 45 miles per hour.

At distances over 100 feet and less than 50 feet, drivers respond to absolute distance as perceived through the size of the vehicle ahead. If the apparent size is too large, the distance is too close.

At distances between 50 and 100 feet, the primary cue is relative speed as perceived through *changes* in the lead vehicle's size. At short distances drivers are unable to detect small changes in the relative velocity of the vehicle ahead.

PURPOSE: To enable the student to make sound passing decisions and to complete passes safely without interference to other road users.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Deciding to Pass on Two- or Three-Lane Roads	When considering passing the vehicle ahead, the student will look for roadway and traffic conditions that prohibit passing. In doing so, he will: ● Observe roadside signs for indications that he is within or approaching a no-passing zone. ● Observe the markings to the left side of the lane, for some distance, to determine whether: ●● There are one or two solid lines. ●● There is a solid line to the right of a broken line. ● Observe the roadway ahead for any of the following: ●● A hill or curve which restricts sight distance. ●● An intersection. ●● A bridge or tunnel. ●● A railroad crossing. ●● A pedestrian on the right or left shoulder or edge of a two-lane road. ● Observe the vehicle ahead: ●● For signals or other indications of an intention to turn left. ●● For indications that the vehicle driver is not alert, for example, if the vehicle continues to weave even after the student has sounded the horn or flashed the headlights. ●● When it is being passed by another vehicle which blocks the student's view of the roadway. When no observable limitations to passing are present, the student may	The student will initiate a pass only when the car is completely beyond a no-passing zone. He may pass if the left side of the lane has no marking or is marked by a broken line or a broken line to the right of a solid line.			

	pass if the pass can be safely completed within the available passing distance. If he has any doubt about the possibility of completing a pass, he will not initiate the pass. If considering a pass when approaching oncoming traffic, he will pass only if the maneuver can be completed without excessive speed and with an adequate safety margin for returning to the driving lane.	The student will not pass if the vehicle ahead is: ● Changing lanes preparatory to passing. ● Weaving or wandering. He may: ● ● Sound the horn or flash the headlights to alert the vehicle driver. ● Slowing down suddenly. ● Passing children, cyclists, or animals.			
Preparing to Pass		When preparing to pass, the student will: ● Select the passing lane. ● ● On two- or three-lane roads, the student will pass moving traffic only on the left. ● ● On three-lane roads, the student will use only the middle lane for passing on the left. ● ● On three- or four-lane roads, the student may pass on the right of vehicles stopped in the center lane for a left turn. ● ● On four-lane roads, the student may pass moving traffic on the right if it is necessary and legal within the state. ● ● On roadways with six or more lanes, the student generally will pass on the left. ● Observe other traffic, particularly that approaching the car from the rear. ● Signal the change well in advance. ● Maintain the proper following distance prior to the change in lanes.	On four-lane roads, the student generally will pass on the left. On roadways with six or more lanes, he may pass on the right when: ● No lane change is necessary. ● It is safe and will expedite the traffic flow.		

PURPOSE: To enable the student to make sound passing decisions and to complete passes safely without interference to other road users *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing to Pass *(Continued)*		● Change lanes in sufficient time to complete steering corrections in the passing lane before passing the vehicle. ● ● On freeways, he will change lanes well in advance of passing because of the more rapid rate of closure.			
Passing	If during a pass its safe completion appears doubtful, the student will abort the pass by slowing down and returning to the driving lane. He may pass several vehicles in one passing maneuver when the remaining passing distance or time permits.	When initiating a pass, the student will sound the horn to signal the vehicle ahead when: ● The vehicle driver's vision to the rear is obscured by ● ● A trailer. ● ● An open trunk lid. ● ● Ice or snow on the rear window. ● ● Objects on the rear window deck. ● The vehicle moves laterally toward the car. ● The vehicle's driver appears to be inattentive. The student will pass the vehicle with minimum delay. In doing so, he will: ● Move through the vehicle driver's blind spot quickly. ● Maintain a speed within the speed limit unless greater speed is necessary to complete the pass in the time available. ● If sudden acceleration is needed, depress the accelerator to the floor to put the car in passing gear. When the sight distance permits passing several vehicles in one passing	When beginning a pass, the student will signal the lead vehicle by sounding the horn if the vehicle is about to pull out and pass.	When it is necessary to signal the lead vehicle at night, the student may flash his headlights.	

		maneuver, he will look for gaps between the vehicles ahead of sufficient size to permit reentering the driving lane without a drastic speed adjustment.			
After Passing		After passing the vehicle, the student will continue to drive in the passing lane until both headlights of the passed vehicle are visible in the rearview mirror, and then return to the driving lane.			

KNOWLEDGES

The student must know the factors that permit him to make a sound passing decision, and complete a pass safely.

Obedience to signs, lane markings, and other passing limitations is a legal requirement in most states.

Passing is prohibited when approaching or at intersections, also on hills, on curves, and in the presence of other roadway features that limit sight distance and hold the possibility of unexpected maneuvers.

The student should not pass when a pedestrian is on either the edge or the shoulder of a two- or three-lane road.

Given the accelerative capability of most cars, approximately 9 to 10 seconds is the average amount of time required to pass a moving vehicle at normal highway speeds. Six seconds would constitute a risky minimum time. Rarely should a pass take more than 15 seconds. Acceleration capability decreases as speed increases, but the degree of decrement varies among car types.

Doubt increases decision time and diminishes the time available to pass. One researcher found that drivers required increasingly more time as the interval between an oncoming vehicle and the car decreased. With any doubts, a pass should not be tried.

Passing behind another vehicle on a two- or three-lane road puts the driver at the mercy of the driver ahead to leave sufficient time and room for the car to reenter the driving lane before meeting oncoming traffic.

Extra caution is necessary when passing on the right because drivers do not expect to be passed on that side. Also, they have more difficulty in detecting vehicles passing on their right and they may enter the right lane without warning. Typically, the horn should not be blown when passing on the right because the driver ahead may suddenly move to the right upon hearing the horn.

Early signalling of intention to pass reduces the chance of a following vehicle pulling out to pass as the car begins its pass.

Maintaining "proper" following distance prior to changing lanes permits:

Checking the clearance ahead.

Acceleration in the right lane before passing.

Deceleration and reentry to the right lane if necessary. Independent studies of accidents and near accidents among professional drivers attributed these situations largely to following too closely before changing lanes to pass.

The blind spot at the left side of the lead vehicle is located at the 7 to 8 o'clock position.

A large number of accidents occur and many errors are committed during passes.

Reasons given for passing accidents include (a) the drivers' disregard of roadway limitations, (b) failure to note an oncoming vehicle or misjudgment of the distance to or speed of an oncoming vehicle, (c) failure to note the lead vehicle signalling or in the process of changing lanes, and (d) swerving sharply in front of the passed vehicle.

About 3% of freeway accidents occur while passing.

SKILLS

The student must be able to decide whether passing the lead vehicle is legal, safe, and worthwhile. To do so, he must:

Judge the available passing time or distance.

When there is no oncoming traffic the time judgment is based upon the distance available, that is, the distance between the car and the end of a passing zone, a curve, a hill, or some other limiting circumstance.

When there is an oncoming vehicle, the judgment is based upon available distance, and the estimate of the speed of the oncoming vehicle. While drivers are accurate judges of distance, they cannot estimate well the speed of an oncoming car; they tend to underestimate if it is travelling fast and overestimate if it is travelling slowly. The driver needs to compensate for his error by allowing additional passing distance in the face of other cars.

Judge the amount of time or distance it will require to pass the lead vehicle.

When the driver is following the lead vehicle, he must be able to judge the accelerative capacity of his car at the speed he is travelling, under the load and operating conditions.

When the driver is approaching the lead car, he must be able to judge the rate differential (closing gap) between himself and the lead vehicle.

He must be able to assess the gap ahead of the lead vehicle.

The skilled driver does not make a series of individual judgments, but rather combines the cues of speed and distance into an overall perception of a safe or unsafe pass. He must continue to observe cues and allow his perception of passing safety to determine whether he completes or aborts a pass once it is initiated.

PURPOSE: To enable the student to enter traffic without interfering with other vehicles.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Before Entering	Before entering traffic, the student will: ● Observe traffic to the front and rear. ● Look for a gap in the rear-approaching traffic of sufficient size for the car to enter without hindering the traffic flow.	The student will yield the right of way to rear-approaching traffic before entering the traffic lane. He will actuate the turn signal to indicate his intention to enter the traffic lane.			
Entering		The student will accelerate smoothly into the gap in the traffic lane.	If entering the pavement from the shoulder, the student will turn the steering wheel sufficiently for the wheels to cross the edge of the pavement at a sharp angle.		
After Entering		After entering traffic, the student will: ● Straighten the steering wheel. ● Accelerate quickly to attain the speed of the traffic moving in the lane.		After entering the traffic lane, the student will look and listen to be sure the directional signal has been cancelled.	

KNOWLEDGES

The student must know the procedures for entering traffic safely and with minimal interruption of traffic flow.

Failure to check traffic before leaving a stopped or parked position is a common cause of accidents and a frequent error of drivers taking road tests.

The maneuver is complete only after the car has matched the speed of the traffic flow.

Moving slower than the traffic may force other drivers to slow down and interrupts traffic flow.

SKILLS

The student must be able to assess the suitability of a gap required for entering traffic. He must also be able to judge the speed of the rear-approaching traffic in order to time his move into the gap.

PURPOSE: To enable the student to leave the line of traffic with minimal interference to the vehicles behind and to the side of the car.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Scanning Roadside		When looking for a place to stop, the student will observe the shoulders and median to determine whether they are firm and wide enough to accommodate the car.	The student will scan the roadside ahead for a suitable area to stop. In doing so, he will: ● Observe the shoulder for obstructions that could prevent the car from fully entering the shoulder, to include trees, utility poles, and sign posts. ● Look for a spot where the car can be seen by traffic at least 200 feet away in either direction. ● When the roadside is occupied by parked vehicles, look for a space large enough for the car to enter safely and to be completely clear of the roadway.		
Leaving Traffic		The student will signal his intention to leave the roadway early enough to alert the vehicles behind the car. He will slow down to a safe exit speed. If circumstances prohibit a reduction in speed before driving off the pavement, he will: ● Grasp the steering wheel firmly to guide the car gradually off the roadway. ● Apply the brakes gently until the car stops. The student will ensure the car is completely clear of the main roadway before stopping.	When the roadside is not paved, he will slow down to about 10 miles per hour before turning off the roadway.		

KNOWLEDGES

The student must know the procedures for leaving the line of traffic with minimal hindrance to the flow, risk of collision with another vehicle, or risk of a one-car accident, and the reasons behind using correct procedures.

Soft and/or narrow shoulders are not suitable areas for stopping the car.

Soft shoulders and medians should not be driven upon because they could cause the car to skid, or even to turn over. Road signs are usually erected to warn drivers of soft shoulders.

A car should be driven entirely off the travelled portion of the roadway onto a shoulder or median. A car that is partially on the roadway is an obstruction to traffic and is in danger of being hit by a vehicle moving in the near lane.

Communicating to other drivers the intention to leave the roadway well before doing so will reduce the chance of being hit from behind when slowing down.

Checking the speedometer upon decelerating after a period of sustained high-speed driving is necessary because drivers tend to feel they are moving slower than they really are. If the speed is too high, the driver could lose control after driving onto the shoulder or collide with a vehicle parked at the side of the road.

SKILLS

The student should be able to recognize the physical appearance of shoulders and judge whether the shoulder is wide enough for the car to pull completely onto it. He should also be able to judge whether the place selected for stopping can be seen at a safe distance by vehicles approaching from both the front and the rear.

PURPOSE: To enable the student to change lanes safely and without obstructing the flow of traffic.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Deciding to Change Lanes	When considering changing lanes, the student will look at the rearview and side mirrors to observe: ● Vehicles passing in the new lane. ● Vehicles in the new lane that are closing rapidly from the rear.	The student will observe the pavement markings to determine whether changing lanes is legally permissible. Before changing lanes, he will: ● Glance at the rearview mirror to see if any vehicle following the car is about to enter the new lane. ● Check for a vehicle that is moving in the blind spot. In doing so he will: ● ● Look out the window with his head turned enough to see around the blind spot. ● ● Vary the car's speed very slightly to help bring into view a vehicle that is in the blind spot and traveling at exactly the same speed as the car. ● On multi-lane roads, look for vehicles about to enter the new lane from the far adjacent lane.	When considering a lane change, the student will look well in advance for regulatory signs that prohibit the maneuver.		
Preparing to Change Lanes		The student will signal his intention to change lanes by using the turn signal and/or the appropriate hand signal. Just before changing lanes, he will accelerate if there is sufficient space ahead to do so. If not, he will maintain his speed.			
Changing Lanes			After signalling, the student will wait a few seconds, if possible, before beginning to change lanes. He will turn the steering wheel sufficiently to enter the new lane smoothly but without delay or straddling the line.		

Completing Lane Changes		After changing lanes, the student will: ● Position the car in the center of the new lane. ● Adjust the car's speed to that of the traffic in the new lane.	After the lane change is completed, the student will cancel the directional signal.		

KNOWLEDGES

Legal and safe lane changing is dependent upon the following:

Observance of the signs and lane markings that govern lane changing. Solid lines mean that the car may not change lanes, broken lines that it may. When there are a solid line and a broken line together, the car may change lanes only when the broken line is nearer the car.

Consideration of the effect of the lane change on safety and traffic flow.

Proper signalling of the intention to change lanes.

While lane changing is a common maneuver, drivers frequently commit errors in performing it. Among the more frequently cited errors are:

Changing lanes without signalling. In one study, 80% of the drivers changed lanes without signalling. Only 25% of the drivers on a freeway signalled a lane change even though they knew they were being observed.

Failure to stay in the proper lane.

Remaining in the lane when a change is appropriate (e.g., holding in the passing lane even though the right lane is open and the car's speed is slower than the speed of the left-lane traffic).

Failure to check for rear-approaching traffic in the new lane prior to initiating lane change. This error has been mentioned as a cause of accidents. For example, on six-lane divided highways, about 5% of the accidents are caused by cars pulling out in front of a passing vehicle.

SKILLS

The student must be able to judge:

If the closing rate and distance of following vehicles in other lanes and the traffic flow will give the student a safe opportunity to change lanes.

The speed and distance of leading vehicles must be similarly gauged. Speed changes must be estimated quickly if changing into the lane is to be done safely.

Before changing lanes, the student must be able to:

Keep traffic to his front, side, and rear under constant surveillance and simultaneously steer the car within its lane.

Accomplish the change in a smooth continuous movement with very slight steering corrections and accelerator reversals.

PURPOSE: To enable the student to park the car safely and legally, and to exit from the car, with minimal interference with other vehicular or pedestrian traffic.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Seeking Space and Determining Suitability		The student will not double park, that is, park on the roadway side of any vehicle parked or standing at the edge of the street or curb.	When looking for a parking space, the student will maintain a speed that is close to the posted speed. Before decelerating to inspect the suitability of a parking space, he will signal his intention to slow down or stop to the vehicles behind him. He will pause briefly to inspect the space to minimize the hindrance to following traffic. When a parking space is adjacent to or opposite a street excavation, he will make sure the car would not impede the traffic flow if parked in this space.	In determining the suitability of a parallel parking space, the student will drive alongside to see if the space exceeds one and one-half car lengths. The student will look for signs and curb or pavement markings to determine whether parking is allowed.	The student will not park in a space where the car would overlap a driveway, except momentarily to discharge or pick up passengers.
Parallel Parking		Before attempting to parallel park, the student will signal following traffic to pass if the roadway width permits.	When entering a parallel parking space the student will back the car slowly, while turning the steering wheel sharply to the right.	When preparing to parallel park the student will position the car alongside and about two feet from the vehicle parked in front of the space to be occupied. To back into a parallel parking space he will: ● Look over his right shoulder and out the back window. ● Back slowly while turning the steering wheel sharply to the right. ● Straighten the steering wheel when the back of the front seat is in line with the rear of the vehicle parked to the front of the space. ● Look to the front to ensure the car will clear the parked vehicle, and then look to the rear again.	

			If the car is parallel parked on a roadway with no curb, the student will turn the wheels toward the roadside.	● Continue backing slowly while turning the steering wheel sharply to the left when the front of the car clears the rear of the vehicle. ● Stop the car just short of the vehicle parked behind. After backing in a parallel space, he will center the car in the space no more than one foot from the curb. If parallel parked on an upgrade, he will turn the wheels sharply away from the curb. If parallel parked on a downgrade, he will turn the wheels sharply toward the curb.	
Angle Parking			When preparing to park in a space at an angle to the roadway, the student will position the car approximately six feet from the parked vehicles. When parking at an angle to the left, he will look to ensure the right front fender and the left rear door will clear the adjacent vehicles.	To enter a space at an angle to the roadway, the student will: ● While maintaining forward motion, turn the steering wheel sharply when the car's front wheels are even with the near side of the parking space. ● Look to make sure there is sufficient clearance from vehicles on both sides. In doing so, he will, when entering at an angle to the right, check the left front fender and right rear door clearance. ● Center the car in the space to allow room for opening the doors.	Upon entering an angular or perpendicular parking space, the student will stop before the front tires touch the curb.

(Continued)

PURPOSE: To enable the student to park the car safely and legally, and to exit from the car, with minimal interference with other vehicular or pedestrian traffic *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Perpendicular Parking				When the approach to a perpendicular parking space is unrestricted, the student will: ● Swing out as much as possible, but at least one car length beyond the line of vehicles. ● Begin turning when the front end is even with the near side of the parking space. ● Check for clearance on both sides. ● Center the car in the space with room for opening the doors. ● Stop before the front wheels touch the curb. When the approach to a perpendicular parking space is restricted he may: ● Enter forward. In doing so, he will: ● ● Drive past the parking space until the front bumper is in line with the far side of the next parking stall. ● ● Back up while turning the steering wheel sharply to the left so that the car turns away from the parked vehicles. ● ● Stop when the left front of the car is in line with the right side of the vehicle parked to the left of the space to be entered. ● ● Drive forward and center the car in the space to allow room for opening the doors. ● ● Reverse the left/right movements above for parking on the left. ● Back in. In doing so, he will: ● ● Position the car about four feet out from the parked vehicles.	

			When backing into a perpendicular parking space, the student will: ● Look to the rear. ● Back slowly while turning the steering wheel sharply so that the rear of the car enters the space.	● ● Pass the park space. ● ● Stop when the back bumper is at the near side of the space.	
Parking on Hills				The student will apply the parking brake on hills before shifting to park position in automatic shift cars. He will turn the wheels sharply away from the curb if parked on an upgrade and sharply toward the curb if parked on a downgrade to hold the car in case the brakes or parking gear fail.	
After Parking			After parking he will: ● Place the gearshift lever in the park position. ● If the car is without a park position, place the gear shift lever in the reverse position. If leaving the car by the street side when parallel parked, the student will look for rear-approaching traffic before opening the door.	The student will apply the parking brake firmly. On a hill the student will apply the parking brake before shifting to park. He will turn off the lights, wipers, heater, radio, and ignition, and remove the key. Before opening the door when parked at an angle, he will look to the rear for a vehicle entering the adjacent space. After getting out of the car the student will lock the car.	Before leaving the car, the student will close all of the windows.

KNOWLEDGES

The student must know the procedures for entering a parking space with the least amount of maneuvering, the laws that govern parking, and the possible impact on traffic flow of a car being parked.

Parking restrictions associated with roadside traffic controls, crosswalks at intersections, safety zones, fire hydrants and fire houses, and railroad tracks are generally the same in most states. However, knowledge of the local requirements is imperative.

Specifically, the car will not be parked:

Within 30 feet of a traffic light or sign located at roadside.

Within 20 feet of a crosswalk at an intersection, except momentarily to discharge or pick up passengers. With this margin of clear space, right-turning vehicles can turn into the lane closest to the curb.

Between a safety zone and the adjacent curb or within 30 feet of the rear side of a safety zone, except to avoid a traffic conflict. Safety zones are meant for exclusive use of pedestrians.

Within 15 feet of a fire hydrant.

Within 20 feet of a fire station entrance or within 75 feet across from a fire station entrance, except momentarily to discharge or pick up passengers.

Within 50 feet of the nearest railroad track.

"No Parking" zones frequently are marked by curbs painted yellow.

In many communities, illegally parked cars are towed away by the police at the driver's expense. A fine is also imposed.

In addition to the traffic delay created by a car being parked, the sudden interruption of the traffic flow increases the likelihood of a rear-end collision.

By "creeping" into a parking space the student will gain more time for turning the steering wheel and for checking the car's position as it enters the parking space.

Parking on hills necessitates special actions to offset the effects of gravity.

By applying the parking brake *before* shifting to the park position, the load on the transmission and parking mechanism can be reduced. This sequence is the reverse of the procedure used on level roadways. Movement of the gearshift lever from the park position when leaving the parking space will be easier if the "apply brake—shift to park" sequence is followed. Also, shifting to park or reverse is imperative on hills to keep the car from coasting.

Leaving on electrically operated controls and accessories, such as the lights and the radio, without the engine running will drain the battery if continued for an extended period. There is a tendency to leave headlights on when parking in a brightly lit area (shopping center, garage) or when driving with lights on in the daytime (fog, rain).

The hazards of getting out of a car on the street side have prompted some states to forbid the opening of car doors on that side.

Securing the car (closing windows, removing ignition key, and locking all doors) before leaving it will greatly reduce the chance of its being stolen. About 80% of stolen cars are parked with the doors unlocked. The chance of stolen cars being involved in accidents is 200 times greater than for owner-driven cars.

SKILLS

The student must:

Be able to perceive that the size of a parking space is sufficient to accommodate the car.

In the absence of signs and curb markings as guides, estimate the appropriate parking distances from "no parking" zones.

Develop the perceptual-motor coordination required to back the car slowly into a parking space while looking out the back window. The skill includes controlling speed with the clutch (manual transmission) or the brake (automatic transmission), rather than the accelerator.

PURPOSE: To enable the student to leave a parking space safely without obstructing other vehicular or pedestrian traffic.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Leaving Parallel Parking Space			When leaving a parallel parking space blocked by a parked vehicle ahead, the student will: ● Back up slowly and stop before touching the vehicle behind. ● Turn the steering wheel sharply toward the roadway. ● Shift to drive or low gear. ● Signal a turn and check traffic to the front and rear, following the procedures for entering traffic. ● Accelerate forward slowly and look to be sure the car will clear the bumper of the vehicle ahead. ● If additional clearance is required, repeat the above procedures but also turn the steering wheel toward the curb while backing.		
Leaving Angular or Perpendicular Space			When backing out of an angular or perpendicular parking space, the student will: ● Check traffic to the rear and vehicles on both sides of the car. ● Back up slowly, watching for traffic that may have been obscured from view by parked vehicles on either side. ● Turn the steering wheel to the right when certain that the car will clear adjacent vehicles. ● Straighten the steering wheel and stop when the car has fully entered the traffic lane. ● Shift to drive or low gear and proceed forward slowly in the lane.	If facing traffic when leaving a perpendicular parking space, the student will: ● Check traffic from the right and from the left. ● Without impeding traffic, move straight forward slowly a few feet to provide clearance from the adjacent parked vehicles when turning. ● Turn the steering wheel as sharply as necessary to achieve the desired direction. ● Check that the rear fender will clear the adjacent vehicle. ● Straighten the steering wheel when clear, and accelerate.	

KNOWLEDGES

The student must know the importance of checking traffic and clearly communicating his intention to leave a parking space.

In one study, failure to check traffic conditions was an error committed by over 8% of the drivers taking road tests.

Failure to observe or signal before moving ranked thirteenth among all errors committed by drivers taking road tests in another study.

Activation of turn signal is not enough. A signal must be followed up with a visual check to confirm that the signal has been detected by other drivers. Sometimes an arm signal may be more visible to other drivers than the mechanical turn signals.

Of all urban accidents, nearly 4% happen to vehicles leaving parking spaces, alleys, or driveways.

A check of the traffic in the opposing lane is necessary because the car may swing partially into that lane when leaving (or entering) the parking space.

Assurance of the car's clearance from other parked vehicles would prevent many accidents that cause minor damage such as dents in fenders and scrapes from sideswiping.

SKILLS

The student must be able to leave a tight parallel space in the fewest movements by the integration of very slow movements with sharp turning (i.e., slow backing, turning sharply toward the curb followed by slow forward movement with sharp turning toward the roadway).

Pedestrians, Cyclists and Animals

PURPOSE: To enable the student to respond with safe and cautious actions when encountering pedestrians, cyclists, and animals.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Pedestrians	The student will yield the right-of-way to pedestrians at all times. He will watch children playing and other distracted pedestrians for indications that they are about to enter the roadway.	The student will look for pedestrians near intersections, crosswalks, and school crossings. He will watch pedestrians for indications of their entering the roadway noting particularly children, pedestrians who are running, and those who appear to be under the influence of alcohol. He will watch pedestrians standing on the roadway who may make sudden movements to avoid traffic. When pedestrians alongside the roadway reduce the lane clearance, he will delay passing the vehicle ahead until both the car and the vehicle are beyond the pedestrians. During inclement weather, the student will watch for pedestrians whose visibility may be obscured by umbrellas, rain hats, or other apparel.	When passing pedestrians, the student will provide maximum lateral clearance, using passing lanes if posssible. When the car is stopped at an intersection where pedestrians carrying large or heavy objects are waiting to cross, he will remain stopped to allow the pedestrians to cross. The student will drive through puddles slowly to avoid splashing pedestrians.		
Animals		If an animal enters the roadway, the student will: ● Prepare to stop or to swerve if traffic permits. ● Hit the animal if swerving would jeopardize his own safety and that of his passengers, other motorists, or pedestrians.		The student will watch out for ani mals in the roadway and pass then carefully. In doing so he will: ● Slow down when entering anima crossing zones or when noting ani mals on or alongside the roadways. ● Maintain a slow speed when over taking and passing animals. ● Resume normal speed after pass ing the animals and beyond thei range.	

Emergency Actions	When in danger of striking a pedestrian or cyclist, the student will: ● Sound the horn. ● Slow down by pumping the brakes. ● Check traffic for space to take evasive action. ● Swerve the car gradually when insufficient stopping distance is available.			

KNOWLEDGES

The student must know the importance of being alert for pedestrians approaching the roadway and of not depending upon pedestrians to pay attention to signals and rules.

Unsafe behaviors on the part of pedestrians are responsible for most of the accidents in which they are involved.

A recent accident report showed that 17% of all fatal accidents involved pedestrians. Most pedestrians killed by automobiles were never licensed to drive or didn't understand traffic problems.

Three-fourths of pedestrian fatalities occur when the pedestrian enters or crosses the roadway.

Crossing between intersections is the greatest single pedestrian action associated with pedestrian deaths and injuries, accounting for about 41% of the deaths and 24% of the injuries.

At intersections with signals, pedestrians starting across late may be trapped by a light change. The driver must appreciate the need to look for and yield to anyone crossing the intersection before he proceeds. In many states, vehicles have the legal right-of-way over pedestrians crossing at mid-block. However, the safe driver knows better than to demand the legal right-of-way. The right-of-way must always be given to the driver; it cannot be taken.

Drivers must be particularly cautious when approaching pedestrians near drinking establishments, late at night when excessive drinking most often occurs, and when a pedestrian is obviously impaired by drinking.

Statistics show that one of every four pedestrians killed in a motor vehicle accident had been drinking.

On city streets, about one-half of those killed had drunk enough to impair their mobility.

While sharp swerving to miss a person or an animal in the roadway may possibly cause loss of car control or a collision with other vehicles, the student must know the advantage of evasive steering over panic braking when confronted with a pedestrian in the car's path.

In a test of driver reactions to a dummy pedestrian suddenly stepping into the path of the car, 27 of 33 drivers made a panic brake stop and hit the dummy head-on although the test was designed so that evasive steering around the dummy was easily possible.

SKILLS

The student must be able to react extremely quickly yet correctly to pedestrians or animals who enter or approach the path of the car.

PURPOSE: To enable the student to drive safely through or by an attended emergency area, or to provide necessary assistance when he is the first to reach a severe accident.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching Attended Emergency Area		When approaching the scene of an accident or emergency operation such as a fire, ambulance, or police vehicle operation, the driver will: ● Slow down in advance of the emergency area and prepare to stop, if necessary. ● Watch out for traffic officers and other persons on the scene. ● Look for signals from persons directing traffic through the area.	When approaching the scene of an attended emergency area the driver will look for flares, signs, or other devices outlining the route through the area.		
Driving Through or by Emergency Area			When driving through or by an attended emergency area, the driver will: ● Drive at a reduced speed. ● Watch for unexpected movement of vehicles and pedestrians on the roadway. ● Continue without stopping or slowing down unnecessarily to view the scene. He will resume normal speed only after completely passing the emergency area.		
Approaching Unattended Severe Accident Scene		When approaching the scene of a severe unattended accident immediately after its occurrence, the driver will stop in a safe location, completely off the roadway, to ensure: ● That his car will not impede access of emergency vehicles to the scene. ● That his car will not hinder the passage of traffic through or by the scene.	In providing assistance the driver will position flares or signals to warn other vehicles, if necessary. The driver will: ● Remain at the accident scene until the necessary help has arrived. ● Provide necessary information to the police and the involved parties, if he is a witness to the accident.	In providing assistance at the scene of a severe accident, the driver may administer necessary first aid. In providing assistance, he may contact the police and request necessary medical aid.	

KNOWLEDGES

The student should know the importance of being alert and keeping up the pace of movement through an attended accident or emergency scene.

An already poor traffic situation frequently becomes more difficult when drivers slow down to view an emergency area.

Drivers who slow down unnecessarily increase the possibility of being hit from the rear and creating a multiple-car accident.

Driving in accident and emergency operation areas increases the possibility of additional accidents because of the irregular movement of traffic.

When the car is the first to reach an accident after it occurs, the student must know that he has a moral, if not legal, responsibility to stop when it is apparent that assistance is needed.

PURPOSE: To enable the student to drive safely alongside parked and parking vehicles.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General	The student will watch for pedestrians or animals entering the roadway from in front of or between parked vehicles.	The student will drive at slower than normal speeds when approaching or driving alongside parked vehicles.			
Approaching Parked or Parking Vehicles		If approaching a parked vehicle with the hood up, the student will slow down and, if possible, position the car sufficiently away from the parked vehicle to avoid striking its driver should he enter the roadway. The student will watch for vehicle doors being opened or other indications that the vehicle occupants are about to leave on the roadway side. Should either situation occur, he will sound the horn or flash the headlight beams to warn vehicle occupants of the car's presence and, if possible, position the car far enough away from the parked vehicle to avoid striking the vehicle door if it is opened. He will look ahead for indications of a vehicle leaving a parking space, including smoke from the exhaust, vehicle driver hand signals, activated directional turn signals, back-up lights, or brake lights.	When stopping behind a vehicle that is about to enter or leave a parking space, the student will allow sufficient clearance ahead to enable the vehicle driver to complete the maneuver without being crowded.		
Passing Parked or Parking Vehicles		When changing lanes to pass a vehicle that is about to enter or exit a parking space, the student will: ● Ensure that there is adequate clearance ahead. ● Ensure the vehicle driver is aware of the car's presence before changing lanes. ● Change lanes cautiously.	When passing a vehicle that is parallel parking, the student will allow a full car width between the car and the vehicle.		

KNOWLEDGES

The student must know the primary sources of potential trouble, and their cues, to be prepared for sudden actions by others.

Driving alongside parked vehicles is potentially hazardous because the driver's view is limited and hazards can appear when there is little time or space for evasive action.

Three key sources of hazards are:

The spaces between parked vehicles through which pedestrians and animals may dart into the street.

The parked vehicle that may suddenly move into the car's path.

Occupants of parked vehicles who may open the vehicle doors to get out without first checking the traffic situation. Positioning the car at least four feet out from the parked vehicle will place it beyond the arc of a door being opened.

Usually, there are cues from parked vehicles of impending entry into a driving lane. Among the cues the student will find useful are:

Exhaust fumes. These indicate the engine is running.

Back-up lights. For these lights to be activated, the ignition must be on and the gearshift lever in reverse. The appearance of back-up lights is often followed by a shift to a forward gear.

Brake lights. Most drivers depress the brake pedal, thus activating the brake lights, just prior to shifting to a forward gear.

Front wheels. The direction toward which the front wheels are pointed may indicate whether the vehicle is ready to leave the space or still maneuvering into a good position for leaving.

Steering wheel. The steering wheels of vehicles parked to the right of the car can be seen from some distance. If a steering wheel is not visible, it may mean the driver is behind the wheel.

A separation of at least a car width from a vehicle that is being parallel parked is recommended to accommodate the wide leftward swing of the vehicle's front end as it backs to the right.

SKILLS

Skill must be developed in using peripheral and central vision to accomplish the finer steering control required to keep the car within its lane while maintaining a safe distance from the parked vehicles.

PURPOSE: To enable the student to accommodate a passing vehicle by adjusting the car's speed and/or position as necessary for the other vehicle to complete the pass quickly.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		The student will glance frequently at the rearview mirror and use his peripheral vision to detect overtaking and passing vehicles. When being passed by a vehicle, he will look ahead to determine whether the pass can be safely completed.			
Normal Pass		When being passed by a vehicle the student will: ● Maintain the car's position in the center of the lane, or move slightly to the right, to provide additional passing clearance if no traffic exists on the right side and the lane width permits. ● Maintain or reduce the car's speed; he will not accelerate. ● Watch for signals or other indications that the passing vehicle plans to cut back in front of the car. He will prepare to slow down to provide a larger space for the vehicle to reenter the lane or to obtain additional following distance if the vehicle cuts in after passing.			
Collision Avoidance	If the situation requires a passing vehicle to cut back sharply into the driving lane, the student will take evasive action. In so doing, he will: ● Slow down as necessary and maintain a firm grip on the steering wheel. ● Observe the condition of the road shoulder to be prepared for leaving the lane if necessary. ● Warn the passengers and leave the roadway on the right if necessary to avoid a collision.	If the passing vehicle attempts to abort the pass, the student will accelerate quickly if there is adequate distance ahead to allow the passing driver to reenter the driving lane.			

KNOWLEDGES

The student should know that he has an active, not passive, role when being passed and must continuously assess the chances for the pass to be safely completed within the distance available, and make adjustments in the car's speed and path to accommodate the passing vehicle.

Leaving the roadway by choice to permit the vehicle to reenter the driving lane is preferable to being forced off the road by the passing vehicle a short time later or to forcing a head-on collision between the passing vehicle and an oncoming vehicle.

Knowing that an illegal pass is usually a dangerous pass, the student should be particularly watchful when a vehicle is passing illegally, so that he may, if necessary, avoid a collision.

SKILLS

The student must be able to judge the ability of a vehicle safely completing a pass of the car, using essentially the same cues as involved in passing another vehicle.

The student must be able to survey the situation rapidly and select the course of action that best suits the successful termination of the passing maneuver. He must be able to detect the actions of the passing vehicle in order to complement them.

PURPOSE: To enable the student to drive ahead of other vehicles with a minimum risk of rear-end collision.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Signalling		The student will signal his intended maneuvers to the following vehicle driver. In doing so, he will: ● Use the directional lights and/or arm signals well in advance, to indicate a change in lane or direction. ● Use the brake lights and arm signal to indicate slowing and stopping. ● Use arm signals, in addition to directional or brake lights, when driving into bright sun glare.			
Observing Following Traffic		The student will glance at the rearview mirror frequently to assess the traffic situation behind, with particular attention to the vehicle immediately following. He will: ● Note the rate at which the vehicle is overtaking his car. ● Watch for the vehicle's directional signals as an indication it will pass his car. ● When tailgated, gradually slow down to allow the vehicle to pass or to force it to follow at a safer speed. If in the passing lane, he will remain calm and will return to the right lane at the first safe opportunity. ● When the following vehicle is moving erratically, guide the car to the right, slow down, and, if necessary, drive onto the shoulder to permit the vehicle to pass.			
Stopping		When the car is stopped, the student will look to see whether the following vehicle has stopped or will be able to stop in time to avoid hitting the car. If a collision appears likely, he will: ● Warn the passengers of the impending crash. ● Remove his foot from the brake pedal. ● Lower his body to the right so that his head and neck will be supported by the seat back.	The student will observe the roadway and traffic ahead to anticipate the need to stop. When stopping is required, he will slow down early and gradually rather than jam on the brakes and risk a rear-end collision.		

Night Traffic			When being followed closely by a vehicle with high beams on, the driver will: ● Avoid looking at mirrors. ● Switch to night position (if the car is equipped with day/night rearview mirror) to reduce the glare. ● Flash the headlight beams quickly. ● Drive at a reduced speed to encourage the vehicle to pass. ● Allow the vehicle to pass when it is safe to do so.		

KNOWLEDGES

The driver must know the actions to be taken to avoid conflict with vehicles following the car.

The smooth flow of following traffic is dependent upon the driver of each vehicle maintaining:

The same speed as the traffic ahead of him.

A stable and adequate headway from the vehicle ahead. A slow-moving car or one whose headway varies will impede the flow of traffic following it. Slow-moving cars also provoke following drivers to attempt hazardous maneuvers, such as risky and illegal passes.

Frequent observations of the vehicle behind enable the driver to determine the rate at which the vehicle is overtaking the car. The spacing between the car and the vehicle will change from one observation to the next.

Signalling too early will confuse the following driver, especially when intersections or driveways are spaced close together. Signalling late or not signalling at all will allow the following driver too little time to adjust his vehicle's movement to the car's actions. The result could be a rear-end collision.

SKILLS

The student must be able to perceive from the direction and speed of cars ahead relative to that of his own car, when he will be forced to reduce speed in order that he can signal following traffic beforehand.

PURPOSE: To enable the student to adjust his course as necessary when meeting oncoming vehicles, and to take evasive action when necessary to avoid a head-on collision.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Lane Alignment and Vehicle Separation	The student will maintain the car's position to the right of the center line when approaching an oncoming vehicle.		When approaching oncoming vehicles, the student will maintain the maximum lane separation between the car and other vehicles by: ● Using the right lanes where possible. ● Positioning the car as far right as possible in its lane whenever a move to a right lane is impossible or impractical.		
Watching Oncoming Vehicle(s)	The student will observe slow-moving or stopped vehicles in the opposing lane and anticipate attempts to pass by the vehicles behind them.	The student will watch for indications that any oncoming vehicle might cross the center line. In so doing, he will: ● Observe the directional signals indicating a desire to turn left or to pass. ● Observe vehicles tailgating, indicating a desire to pass. ● Observe a vehicle backing into or leaving a parking space and anticipate that its outward swing will cause it to: ●● Cross the center line on two-lane roads. ●● Force a passing vehicle across the center line on four-lane roads. ● Observe an oncoming vehicle with its right wheels off the pavement and anticipate an over reaction by the driver in regaining the roadway. ● At left curves, watch for oncoming vehicles drifting toward his lane. ● Watch for vehicles being forced across the center line when oncoming traffic is merging.			
Observing Roadway	When the roadway surface could impair the control of an oncoming vehicle, or force it across the center line, the student will slow down and steer to the right, if possible.	The student will observe the roadway for obstructions, such as potholes and road repair equipment, that might force the oncoming vehicle across the center line.	The student will observe the roadway for conditions that could adversely affect the control of the oncoming vehicles, to include a slippery surface caused by ice or rain and ruts in deep snow or mud.		

Normal Passing		The student will maintain precise control over the car when passing oncoming vehicles to be ready to react quickly to wind gusts, road irregularities, and oncoming vehicles crossing the center line.			
On-Road Evasive Action	If a vehicle starts across the center line, the student will: ● Sound the horn and/or flash the headlights to signal the driver. ● Remove his foot from the accelerator immediately. ● Tap the brakes lightly to warn the traffic following the car. ● Slow down by braking as necessary. If the vehicle continues across the center line, the student will: ● Steer the car toward the right side of the roadway. ● Apply the brakes quickly to gain time enough for the vehicle to return to its lane. ● Look for a safe place to leave the roadway should that be necessary. ● Continue at a reduced speed until the vehicle has returned to its lane and is under control. When an oncoming vehicle fails to return to its lane, the student will: ● Attempt an emergency stop only if there is sufficient stopping distance between the car and the vehicle. ● If a stop cannot be made, look for space on the roadway for taking evasive action, preferably to the right of the oncoming vehicle. He will drive to the left of the oncoming vehicle only: ● ● When the vehicle is moving to the right deliberately and under full control, for example, turning into a cross street or driveway. ● ● When there is no other oncoming traffic.	If on-road evasive action is possible when an oncoming vehicle fails to return to its lane, the student will: ● Grasp the steering wheel firmly to make steering corrections with full control. ● Remove his foot from the accelerator to slow down. ● Refrain from braking to avoid the risk of locking the brakes and therefore losing steering control. ● Sound the horn to warn other drivers.			

PURPOSE: To enable the student to adjust his course as necessary when meeting oncoming vehicles, and to take evasive action when necessary to avoid a head-on collision *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Off-Road Evasive Action	If forced to leave the roadway to avoid a head-on collision the student will: ● Straighten the wheels as gradually as possible. ● Slow down by pumping the brakes, adjusting the pressure in terms of the surface conditions and the available stopping distance. ● Apply the brakes steadily to stop the car when the speed is down to 10 miles per hour or less.	If the car must leave the roadway to avoid a collision with an oncoming vehicle, the student will: ● Look for the first available space to leave the roadway. Select in decreasing order of preference, among the following: ● ● The shoulder. ● ● A side street, driveway, or parking area if the car is moving slowly enough to make the turn. ● ● A field or lawn. ● ● Shrubbery, small trees, sign posts, or other objects that will yield when hit by the car. ● ● Embankments. ● Decelerate and then leave the roadway. In doing so, he will: ● ● Pump the brakes to decelerate rapidly without locking the wheels. ● ● When at slow speed, turn the wheels as gradually as possible. ● ● Release the brake pedal when crossing the edge of the shoulder. After the danger of a collision has passed the student will: ● Return to the roadway from a stationary position, once the precautions for entering traffic have been taken, by turning the wheels sufficiently to cross the roadway edge at a sharp angle. ● Return to the roadway without stopping, if necessary, by releasing the brake pedal and steering toward the roadway as gradually as possible.			

Unavoidable Collision		If a collision with an oncoming vehicle is unavoidable, the student will: ● Remain in the car, making no attempt to get out. ● Steer to sideswipe the vehicle or collide at an angle, if possible, to lessen the effects of impact.			

KNOWLEDGES

The student must know the many factors that could prompt an oncoming vehicle to cross the center line into the car's path and should be prepared to take precautions to reduce the risk.

Poor visibility, swerving to miss a pedestrian or cyclist, road defects or obstructions, poor judgment in speed and positioning of the vehicle, falling asleep, and alcohol and drugs are all factors that could cause a driver to allow a vehicle to cross the center line. In one year about 16% of all accidents involved vehicles moving in opposite directions.

The risk of meeting an oncoming vehicle can be reduced by positioning the car as far to the right as possible. Accident reports reviewed showed a substantial number of accidents that could have been avoided if the vehicles had been in their respective right lanes rather than in the median lanes.

Using low-beam headlights to help the oncoming driver to see better and, as necessary, leaving the roadway are among other precautions against head-on collisions.

Evasive steering has been cited repeatedly as one of the most important means of preventing accidents and of reducing the severity of unavoidable accidents. Studies have indicated that swerving to the right affords a better chance of avoiding an on-coming vehicle than swerving to the left, since the most likely evasive action of an oncoming car is to turn to the left (its right).

When the car must leave the roadway to avoid a head-on collision, the car's speed should be reduced to a relatively low speed before crossing the edge of the roadway.

At moderate or higher speeds, the car might be thrown out of control.

About 5% of one-car accidents were compounded by excessive speed and steering corrections on the shoulder.

If collision with some type of object is inevitable, the driver must be able to select rapidly some relatively yielding objects (shrubbery, sign posts) as preferable to rigid objects (bridge abutments, large trees, steel poles) which, in turn, are preferable to a head-on collision with a moving vehicle.

SKILLS

The student should:

Practice evasive actions to the point where evasion through steering takes precedence over hard braking.

Be able to modulate steering corrections and braking when on shoulders to effect a controlled yet rapid stop.

PURPOSE: To enable the student to safely overtake a vehicle ahead and to avoid having to initiate emergency maneuvers.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Overtaking Characteristically Slow Vehicles	The student will prepare to reduce speed when overtaking other vehicles that characteristically move slowly, including: ● Farm vehicles, underpowered vehicles, and trucks on upgrades. ● Vehicles that are turning or exiting, entering the roadway, merging with other vehicles, or approaching controlled intersections or railroad crossings.	The student will observe decreasing distance between the car and the vehicle ahead. He will prepare to stop when overtaking vehicles that stop frequently, including transit and school buses, postal delivery vehicles, and, at railroad crossings, buses and trucks carrying inflammables.			
Decelerating		When it is necessary to reduce speed markedly upon overtaking a car ahead the student will: ● Give a hand signal to following vehicles before slowing down. ● Begin to slow down early enough to avoid emergency stops. ● Begin to slow down rapidly enough to assure at least a two-second separation from the vehicle ahead.			
Overtaking Moving and Stopped Vehicles		Upon overtaking the vehicle ahead, the student will select one of the following courses of action. He will: ● Pass the vehicle if traffic permits. ● Follow the vehicle by matching its speed and maintaining a separation from the vehicle appropriate to its speed. ● Reduce the car's speed to remain at a distance sufficiently behind the vehicle to operate independently of it.	If the overtaken vehicle is stopped, the student will stop far enough behind the vehicle to pass it without first backing up.		

After overtaking and stopping behind a stopped vehicle, the student will:

- Watch for passengers leaving the vehicle.
- Watch for the vehicle to turn suddenly.
- Observe traffic approaching from the front and rear before attempting to pass the vehicle.

If there is insufficient distance to stop before colliding with a stopped vehicle, he will attempt evasive steering or passing, if traffic permits, rather than hard braking which might result in a skid or loss of control.

When it is safe to pass a stopped vehicle, the student will sound the horn to warn the vehicle driver and then pass.

KNOWLEDGES

The student must know that overtaking a vehicle gradually will allow the driver time to formulate the alternative courses of action available, as dictated by the situation ahead, and to select the best course of action without the pressure associated with emergency maneuvers.

Attention to the situation to the sides and rear of the car is necessary preparation for any required evasive action.

Accidents relating to overtaking vehicles have been caused frequently by the driver's failure to note the actions of vehicles ahead (e.g., a moderate number of accidents are caused by a driver's failure to note traffic stopped ahead for a left turn).

Another cited cause is failure to check traffic in the adjacent lane prior to entering it to pass and/or to avoid impact with a stopped vehicle or traffic control device. However, many rear-end collisions could be avoided if drivers would attempt evasive steering or passing (after checking) rather than hard braking.

SKILLS

The student must be able to judge the rate at which his car is closing with the vehicle ahead in order to adjust his speed or initiate a pass at the proper time.

The primary perceptual cue in the daytime is the change in apparent size of the lead vehicle.

At night the primary cue is the distance between the taillights.

Size or brightness of the taillights are not useful cues.

NORMATIVE INFORMATION

The student generally bases his perception upon the light separation of a standard American vehicle and will frequently overestimate his distance from a compact or foreign small car.

PURPOSE: To enable the student to act safely when in the vicinity of special vehicles, viz., school buses, police, fire, and other emergency vehicles.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
School Bus		When following or approaching an oncoming school bus, the student will: ● Look for indications that the bus is preparing to stop. He will: ● ● Watch for indications from the bus, including turning on of flashing amber lights or brake lights. ● ● Watch for other altering indications, such as groups of waiting children and signs designating a bus-stop point. ● Slow down and come to a complete stop if the bus is stopping in the roadway in either direction to load or unload passengers. He will stop: ● ● When the bus's flashing red lights and/or mechanical arm are on. ● ● When the bus door is open if the bus is not equipped with stop signals. ● Remain stopped until the school bus signals have been turned off or the bus proceeds and all children have cleared the traffic area.			
Emergency Vehicles		If an ambulance, fire truck, police car, or other emergency vehicle is approaching from any direction, the student will: ● Pull over to the curb or shoulder and stop. ● Clear an intersection before stopping to avoid blocking it. ● Proceed only when certain all emergency vehicles have passed.			

	If a police vehicle with its signals on (flashing lights and/or siren) is following the car, the student will pull over to the right side of the roadway as soon as it is safe to do so and stop.	When an emergency vehicle siren is heard but the vehicle is not visible, he will: ● Slow down and open the window to improve sound localization. ● Stop and look both left and right before proceeding through an intersection. If approaching a vehicle ahead with the flashing red or yellow lights, the student will: ● Slow down and prepare to stop if required. ● Watch for obstacles or disturbances on the roadway beyond the emergency vehicle. ● Watch for slow-moving or stopped vehicles on the roadway. ● Look for traffic control officers or flagmen on the scene.	When approaching an emergency vehicle from behind, the student will: ● Slow down and prepare to stop if required. ● Remain at least 500 feet behind the vehicle. ● Watch for other emergency vehicles behind the car.	If the police vehicle also stops after the student has stopped in response to the vehicle's red lights or siren, the student will remain stopped and await further instructions from the officer.	
Funeral Procession			The student will yield the right-of-way to all vehicles in a funeral procession or other type of convoy and refrain from cutting into the line of procession.		
Approaching Bus Stop		When approaching a bus stop, the student will watch for pedestrians crossing the street to board the bus or street car. When approaching a bus or streetcar that is discharging its passengers directly onto the street, he will: ● Stop before reaching the stopped vehicle. ● Remain stopped until the vehicle proceeds. ● Look to ensure that pedestrians have reached safety before proceeding.			
Near Streetcar Tracks			When driving near streetcar tracks, the student will avoid driving on top of the tracks.		

KNOWLEDGES

The student must know the laws that govern drivers' responses to special vehicles, the hazards associated with encounters with special vehicles, and the precautionary measures that should be taken.

Special vehicles include emergency vehicles, school and transit buses, and vehicles in a procession or convoy.

Other emergency vehicles may be rushing to the scene and may be following the vehicles that prompted the student to pull over and stop; some, such as unmarked police vehicles, may appear to be ordinary vehicles. The careful driver knows that he should wait until he is certain all emergency vehicles have passed before proceeding on his way.

The audibility of sirens is limited in moving cars. The student should know how to enhance his chances of hearing sirens by keeping the noise level at a minimum within the car (e.g., radio volume low) and a window open.

Funeral processions and convoys are typified by the physical similarity of vehicles, a police escort, and vehicles with their headlights on. Having all vehicles driven with the headlights on is a means of communicating to other motorists the nature and length of the line of traffic. Vehicles within a procession or convoy do not stop for traffic controls if the first vehicle has proceeded through.

Persons leaving a bus or rushing to get on frequently are not alert to passing traffic. Also passengers who have left a bus may step from in front of the bus into the path of a car in an effort to cross the street.

PURPOSE: To enable the student to approach an intersection and to react appropriately to other traffic and traffic controls.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching and Entering Correct Lane		When approaching an intersection the student will slow down in sufficient time to avoid stopping in the intersection or on the crosswalk. He will observe signs providing lane information and will enter the correct lane as early as possible, but no later than 100 feet before reaching the intersection.	When approaching an intersection the student will slow down gradually, but not too early, especially if followed by another vehicle.		
Preparing to Turn		When intending to turn, the student will enter the far right lane for a right turn or the far left authorized lane for a left turn, unless otherwise directed. He will signal his intention to turn as soon as possible without causing confusion, but no later than 100 feet before reaching the intersection. (See Educational Objective on Turning) If unable to enter the correct lane for a turn, the student will proceed to the next intersection.			
Observing Traffic Controls	The student will slow down and prepare to stop if he sees the traffic light changing from green to yellow.	If an officer and control devices are in conflict, the student will follow the officer's directions. The student will prepare to stop if the light is red, flashing red or yellow, and will proceed with caution although ready to stop if the light is flashing yellow. He will proceed through the intersection when the light changes from green to yellow, if stopping would cause conflict with following vehicles or require a vehicle to stop within the boundaries of the intersection.			

		He will slow down in preparation for stopping at an intersection controlled by a stop sign. He will slow down sufficiently to stop, if necessary, at an intersection controlled by a yield sign and will proceed cautiously only when the intersection is clear.			
Observing Other Traffic	When a vehicle approaching from the left and student's car are on major roads, the student will observe the other vehicle for an indication of slowing down and will prepare to stop if the vehicle does not yield the right-of-way.	The student will observe other traffic when approaching an intersection. In doing so he will: ● Observe oncoming traffic for an indication of a left turn and prepare to stop quickly if an oncoming vehicle suddenly makes a left turn. ● Reduce his speed to enable a left-turning vehicle in the intersection to complete the turn, and be ready to stop if the vehicle does not complete the turn. ● Observe the path ahead of a left- or right-turning vehicle to anticipate a forced stop. ● Slow down or stop to permit a vehicle approaching from the right to clear the intersection if the vehicle is close and rapidly approaching the intersection. ● Observe the path of the vehicle approaching from the right to anticipate a forced stop. ● Consider yielding the right of way to a vehicle on the left, when both vehicle and car are on major roads, if it will facilitate traffic flow. ● If the car is on a minor road and a vehicle approaching the intersection from the left, with the right-turn indicator flashing, is on a major road, slow down and enter the intersection only after the vehicle has begun to turn.	If the car is on a minor road and a vehicle approaching the intersection from the left is on a major road, the student will yield the right of way to the vehicle on the left if it is close and rapidly approaching the intersection.		
Stopping		When stopping at an intersection, the student will stop before reaching the crosswalk. The student will stop at the intersection and will edge forward slowly if vision is obscured by buildings, trees or hedges, parked vehicles, or other obstructions.			

KNOWLEDGES

The student must know how to reach the intersection safely and to continue through it in a safe, efficient manner.

Traffic controls are placed at intersections to facilitate the traffic flow. They may also serve as a cue to the driver that other traffic is generally present or can be expected in the area. Being aware of the significance of traffic controls is crucial.

The length of time a traffic light is activated is fixed. It is important to gauge the length of time, if possible, and to anticipate the light changing from green to red if the green has been on for some time. By doing so the student will be better prepared to stop if the light should change.

The amber light usually warns that the red light will be turned on soon thereafter.

Intersections may be controlled by stop signs or yield signs. At some intersections all traffic is required to stop (four-way stop) before proceeding.

Failure to yield the right-of-way is often listed as a cause of accidents. Regulations regarding the right-of-way must be a part of every driver's knowledge if he is to be a safe, efficient driver.

When car and vehicle reach the intersection at the same time, the vehicle from the right has been given the legal right-of-way since it is the first to clear the two vehicles' line of intersection. This rule applies only when there are no other traffic controls.

At uncontrolled and four-way stop sign intersections, the driver who first reaches and stops at the intersection has the right-of-way.

In addition to observing laws covering intersections, the student must guard against the unsafe acts of others.

Slowing down too early when approaching an intersection not only delays following traffic, but can cause a rear-end collision because following drivers may not be expecting deceleration. A following driver may become so irritated that he passes when it is unsafe to do so.

If a vehicle is seen approaching from either the right or the left at the intersection, removing the foot from the accelerator and covering the brake provides an extra margin of safety to respond to the driver who is not obeying the traffic regulations. Never assume the other driver will yield.

The student should know local regulations covering approach to intersections.

Legal requirements in many states stipulate that a driver must signal his intention to turn at least 100 feet before reaching the intersection.

Statistics indicate that drivers signal right turns about half the time and left turns about two-thirds of the time. The frequency of signalling turns is reduced when special turn lanes and directional arrow traffic lights are present.

The frequency of signalling tends to increase with increased speed at intersections.

Legal requirements in some states stipulate that the driver enter the correct lane for passing through or turning at the intersection at least 100 feet prior to reaching the intersection.

Using the center lane when proceeding through an intersection with three lanes in one direction avoids conflict with right- and left-turning vehicles.

Many times a car's position is a more obvious clue of intentions to other drivers than signals.

Most states prohibit stopping in an intersection or crosswalk.

Using the center lane when proceeding through an intersection avoids conflict with right- and left-turning vehicles.

An unobstructed view is important.

In a moderate number of accidents, collisions occurred at intersections where vision was reportedly obstructed or limited by buildings, vegetation, or parked cars.

Roadside features that obscure the driver's vision at intersections should be treated as if they were traffic lights and signs requiring the driver to stop. By stopping, the driver has an opportunity to study the traffic situation more carefully before proceeding rather than haphazardly continuing.

PURPOSE: To enable the student to proceed through an intersection prepared to react to changing traffic conditions.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Observing Traffic Controls	The student will slow down and check cross traffic when entering an intersection controlled by a "yield" sign.	When preparing to drive through an intersection, the student will observe traffic controls and will respond appropriately: ● When the light changes from red to yellow, he will not anticipate the green light by moving on the yellow light, but will wait until the light has changed to green before starting. ● He will enter the intersection, after checking for cross traffic, if the light is green or flashing yellow. ● He will come to a complete stop before proceeding through the intersection if there is a flashing red light. ● If a green arrow governs the lane, he will proceed only in the direction indicated by the arrow. ● When the intersection is controlled by a stop sign he will come to a complete stop, proceeding only when it will not interfere with cross traffic. ● When encountering a "yield" sign, he will proceed only when it will not interfere with cross traffic.			
Observing Pedestrian and Motor Traffic		When preparing to drive through an intersection, the student will observe other traffic before proceeding. In doing so he will: ● Observe the path of traffic ahead to anticipate any stops and prepare to stop should the lead vehicle stop suddenly. ● Enter the intersection only if traffic ahead permits complete passage.			

		• Stop if oncoming traffic suddenly makes a left turn across the car's path. • Observe traffic from the left. If a vehicle signals for a right turn, he will not pull out until the vehicle begins to turn. • Observe traffic from the right before entering an intersection and enter it only when safe passage is assured. The student will slow down and proceed cautiously if pedestrians are near the corner, yeilding the right-of-way or stopping if a pedestrian enters the street.			
Stopping or Changing Route in an Intersection		The student will avoid route changes while in an intersection by completing the turn if he has signalled before entering and by not turning if he has not signalled before entering. He will stop in an intersection only when traffic requires doing so.		The student will avoid route changes while in an intersection by pulling off the roadway to plan an alternate route after passing through the intersection. He will not stop in an intersection to obtain information from route signs or traffic control officers.	
Proceeding Through the Intersection		When proceeding directly through an intersection, the student will observe traffic preparing to turn left and will prepare to stop should a left turn be initiated. If, upon entering an intersection, a vehicle suddenly appears from the left, the student will accelerate rapidly to get out of the way or will swerve sharply to the right to reduce the impact angle. He will attempt to avoid stopping in the direct path of the vehicle. If a vehicle approaches rapidly from the right while he is crossing an intersection, he will not attempt to stop if the stop cannot be made out of the path of the other vehicle. Instead, he will accelerate rapidly to get out of the way.	The student will proceed through the intersection without yielding to oncoming vehicles turning left if following traffic is heavy.		

KNOWLEDGES

The student should know that a large number of traffic accidents occur at places where two or more traffic flows come together.

In 1968, 22.5% of all accidents resulted from failure to yield the right-of-way, passing a stop sign, or disregarding a traffic light. Accident data were obtained from traffic authorities in 56 cities and from rural traffic authorities in 18 states.

Failure to honor a stop sign and/or failure to yield to all cross traffic before proceeding past a stop sign is a cause of a moderate percentage of accidents.

Failure to note or honor a yield sign was the primary cause of a moderate number of accidents.

In 1969, one-third of all accidents involved two vehicles at intersections. In 1968, there were 7,100 fatal two-vehicle accidents at intersections.

Of all accidents in 1968, 16% involved vehicles entering intersections at an angle. Accident data were obtained from traffic authorities in 290 cities with populations over 10,000 and from rural traffic authorities in 22 states.

Of all city accidents, 20% are broadside collisions at intersections as indicated by a 1969 publication.

In a survey of accidents, the impact in a number of them could have been reduced or avoided had the driver of the car swerved to the right instead of braking and maintaining course.

Accident reports show that a large number of collisions at intersections might have been avoided had the defensive driving technique of checking cross traffic at the intersections been practiced.

Many intersections are controlled by lights, control signals, and signs.

Starting before the green light appears will interfere with cross traffic.

The first three seconds after the light changes are the most dangerous. A thorough search of the traffic situation is required before proceeding.

Coming to a full stop at stop signs permits vehicles approaching from the left to emerge from behind the blind spot created by the car's left door post.

Vehicular and pedestrian traffic.

A driver must yield the right-of-way to pedestrians in the crosswalk whether or not the crosswalk boundaries are painted.

Checking the intersection for other vehicles at least twice is necessary because the driver has blind spots that make one glance insufficient for driving safely.

Looking for traffic first from the left is advisable since that traffic presents the greater threat by passing the car's path at a closer distance.

A vehicle may intend to turn beyond the intersection. A signal is just a warning, not a guarantee that the vehicle will turn.

Failure to complete passage of the intersection will block cross traffic and is illegal in some cities.

The length of a sufficient gap in traffic will be defined differently by different drivers. Generally a seven- to eight-second gap or lag in the flow of traffic is required before the driver should enter an intersection. During peak traffic hours this gap may be reduced by a second or two.

Drivers tend to underestimate gaps in traffic from the left and overestimate gaps in traffic from the right, owing to differences in angle of view. During peak hours, drivers in a hurry tend not to allow sufficient gaps in traffic from the right.

When a signal for a turn has not been given, it is important that the driver not turn, because turning would not be expected by other drivers. Also, control of the car could be lost if the turn is attempted without prior deceleration, because the car's speed will be too fast for the turn. Proceeding to the next intersection to turn is the proper thing to do.

SKILLS

When proceeding through an uncontrolled intersection, not having the right-of-way, the student must be able to judge whether he can clear an intersection ahead of cross traffic. This judgment depends on his ability to:

Estimate the speed and distance of an oncoming car or cars and judge the time that is available before the first car arrives ("lag") or between two approaching cars ("gap").

Judge the amount of time needed to cross the intersection. These judgments appear to be combined into a single perception of an adequate or inadequate "lag" or "gap".

PURPOSE: To enable the student to safely make a right turn at an intersection.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing to Turn		The student will signal his intention to turn well in advance of the turn. He will position the car for a turn so that it can clear the corner and remain completely within the intended lane. He will observe traffic controls before attempting to make a right turn. He will check cross traffic to the left and if there is a line of traffic will wait for a gap of sufficient size before proceeding. He will check cross traffic to the right to make sure there are no vehicles blocking passage in the intended lane.			
Turning		When turning, the student will enter the lane nearest the curb, turning sharply enough to avoid blocking or entering the left lane.	When making a turn, the student will use the hand-over-hand technique. He will avoid shifting gears or using hands for any other activities other than steering while making the turn. He will accelerate slightly during the turn but will not exceed 15 miles per hour. After the turn has been completed the student will check to see that the directional signal has been cancelled.	When turning, the student will enter the lane nearest the curb without cutting the corner with the right rear wheel. The student will not fall below 5 miles per hour during a turn unless required by traffic.	

KNOWLEDGES

The student must know the following in order to turn safely at intersections:

In most states turning right on a red light is permitted only when an erected sign so indicates. Some states permit a right turn on a red light without an erected sign.

In addition to checking left, checking cross traffic to the right before initiating a right turn allows the driver to see if a vehicle from the right may be passing in the lane in which the driver intends to turn.

Keeping close enough to the curb or parked vehicles when turning right prevents a following vehicle from passing on the right.

Slight acceleration helps to maintain stability and to prevent a skid.

Excessive speed reduction interrupts the flow of traffic to the rear, causing delay and increasing the chances of a rear-end collision.

SKILLS

The student must master the basic skills involved in making turns (see "Turning") so that he will remain within the right lane throughout the turn, avoid striking or cutting across the curb with front or rear wheels, and cope with pedestrians and traffic while keeping eyes focused sufficiently well ahead.

He must be able to judge whether he can complete the turn ahead of, or merge with, traffic from the left. This requires:

Estimating the time available before the first car arrives ("lag") or between approaching cars ("gap").

Estimating the time that is required to complete the turn and accelerate to the speed of approaching traffic.

These judgments appear to combine to form a simple perception of an adequate or inadequate "lag" or "gap".

PURPOSE: To enable the student to safely make a left turn at an intersection.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		He will observe the traffic controls before making the turn (see Educational Objective on Proceeding Through an Intersection). The student will signal his intention to turn well in advance of the intersection (see Educational Objective on Turning). When turning left at an intersection, he will check cross traffic and wait until there is a sufficient gap in traffic from the left and right before proceeding to turn.	When turning left at an intersection the student will not pull halfway into the intersection if doing so will interfere with cross traffic.		
No Oncoming Traffic		When attempting to turn left at an intersection when there is no oncoming traffic, the student will turn into the far left lane.	When attempting to turn left at an intersection when there is no oncoming traffic the student will: ● Pull partially into the intersection. ● Begin the left turn before reaching the center of the cross street. He will enter the appropriate lane for normal driving after completing the turn (See Educational Objective on Lane Changing).	The student will check to be sure that the directional signal has been cancelled after completing the turn.	
Oncoming Traffic Stopped at Intersection		When oncoming traffic is stopped at an intersection controlled by a green arrow, the student will stop before turning left if the arrow disappears, unless he has already begun the turn.		When oncoming traffic is stopped at an intersection controlled by a green arrow, the student will turn left across the path of oncoming traffic.	

	When an intersection is controlled by an advanced green light the student will stop before beginning a left turn if oncoming traffic begins to move forward, which indicates the end of the advanced green period.	When oncoming traffic is stopped at an intersection controlled by an advanced green light, he will check to see that the oncoming traffic has not anticipated the green light. When oncoming traffic is stopped at an intersection controlled by a delayed green signal he will wait until the oncoming traffic has stopped, which indicates the beginning of the delayed period; then he will turn across the path of the oncoming traffic.	When oncoming traffic is stopped at an intersection controlled by an advanced green light, he will turn across the path of the oncoming traffic immediately after the light turns green.		
Oncoming Traffic Approaching Intersection	When oncoming traffic is approaching the intersection, the student will complete the turn if doing so will not impede the flow of oncoming traffic. He will yield the right-of-way to oncoming traffic when he intends to turn left at the intersection. He will observe the flow of oncoming traffic for an acceptable gap prior to turning left at an intersection.	When oncoming traffic is approaching and close to the intersection, the student will proceed to the center of the intersection, remaining to the right of the center line, with wheels pointed straight ahead and with his foot firmly on the brake. He will check the cross street to make sure it is clear of pedestrians and vehicles before he turns left.			
Oncoming Traffic Signalling		When an oncoming vehicle signals an intention to make a turn toward the student's right, and the student intends to turn left at the intersection, the student will keep the wheels pointed straight ahead after pulling partially into the intersection and stopping. The student, before proceeding, will also observe the oncoming vehicle to verify that it has turned.		When an oncoming vehicle signals intention to make a turn toward the student's right, the student will: ● Pull partially into the intersection and stop. ● Remain to the right of the center line. ● Keep his foot firmly on the brake until there is an acceptable gap in traffic.	

(Continued)

PURPOSE: To enable the student to safely make a left turn at an intersection *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Oncoming Traffic Signalling *(Continued)*	When an oncoming vehicle signals a turn toward the driver's right, the student will yield to any through, oncoming traffic before proceeding to turn left at the intersection.	When an oncoming vehicle signals an intention to make a turn toward the student's right, and then stops or gives an indication of doing so, the student will: ● Stop before reaching the oncoming vehicle, and allow enough road space for the oncoming vehicle and the student's car to complete the turns. ● Pause and check the cross street to the left for pedestrians or vehicles.	The student will complete the left turn after the oncoming traffic that has signalled a left turn has cleared the intersection, or after the light has changed. When an oncoming vehicle signals intention to make a turn toward the student's left, the student will pull partially into the intersection and stop. Then the student will: ● Pause until the oncoming vehicle begins to turn. ● Turn left into the nearest left lane of the cross street. ● If only one lane is available, wait until the oncoming vehicle has turned.		

KNOWLEDGES

The driver must watch for information regarding local regulations about making left turns at intersections, and be concerned with oncoming traffic.

Some states permit a left turn from a one-way street into a one-way street on a red light.

Although most states require the driver to turn into the far left lane when turning left, some states permit turning into any lane on the right half of the roadway.

The driver should yield to oncoming traffic when he is preparing to turn left, even when the signal is changing from green to amber since the oncoming vehicle may continue through the intersection. Failure to yield to oncoming traffic before turning left at an intersection was noted in a moderate percentage of the accident reports reviewed.

Frequently, oncoming traffic reacts to the end of the cross traffic's yellow cycle rather than waiting for the green light; consequently it is important to be sure, before turning left, that the oncoming traffic is not anticipating the green light.

An "advanced green" traffic signal means that oncoming traffic is stopped during the initial portion of the green cycle. Noting the length of time the advanced green light is activated should serve as a cue to the driver. In any case, turning left at an intersection should be exercised cautiously, but especially if the advanced green signal has been activated for several seconds.

A "delayed green" traffic signal means that oncoming traffic is stopped during the final portion of the green cycle.

The presence of any traffic signal or sign is a warning of a danger zone regardless of the color of the light, or type of signal. Local regulations regarding turns at intersections may vary.

The student should know the hazards present in a left turn and the means of minimizing these hazards.

Approximately a one-half-second greater gap is required than for making a right turn. About two-thirds of a second more is required than for proceeding through an intersection.

Checking vehicle and pedestrian traffic to the left before starting a turn prevents being forced to stop in the line of oncoming traffic.

Occasionally an oncoming vehicle's left-turn signal may be flashing in error. It is important to make sure of the intentions of the driver of any oncoming vehicle before proceeding.

The driver should pause before turning left if he sees an oncoming vehicle signalling a right turn. The oncoming vehicle's right-turn signal may be flashing in error or the driver may change his mind.

Two left-turning vehicles (car and oncoming vehicle) should cross to the left of center of the intersection. This allows both lines of traffic to complete turns without interfering with one another.

Proceeding to the center of the intersection allows the left turn to be completed quickly when traffic permits.

Keeping the wheels straight ahead, instead of to the left, and keeping a foot on the brake prevents the car from being pushed into oncoming traffic if struck from behind.

The car should be positioned in the lane closest to the direction of the turn, unless otherwise marked. This prevents anyone from passing on the side in which the driver intends to turn and usually prevents the car from impeding other traffic.

SKILLS

The student must develop the ability to initiate a left turn at the appropriate time so that he enters the proper lane in the direction in which he intends to drive without impeding traffic. He must be able to:

Judge closing distance and estimate the time it will take for oncoming traffic to reach the intersection.

Judge the appropriate point at which to initiate a left turn in order to enter the appropriate lane.

Determine whether the turn may be completed without interfering with other traffic from the right, left, or ahead to which he is required to yield.

Judge the speed and distance of approaching cars.

Judge the time available before the car arrives ("lag") or between two cars ("gap").

Judge the time required to clear the intersection and, in the case of traffic from the right, to accelerate to the speed of traffic.

PURPOSE To enable the student to negotiate traffic circles safely.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Entering		The student will enter a traffic circle in a counterclockwise direction.	When entering the circle the student will yield to vehicles already in the circle.		
Driving Through			When driving through a traffic circle, the student will enter the inside lane if traveling more than halfway around the circle, but will remain in the outside lane if traveling less than halfway around the circle.		
Leaving		When leaving a traffic circle the student will observe traffic entering the circle and will maneuver to the outside lane when it is safe to do so.	The student will enter the outside lane when getting ready to leave the circle.	If the intended exit is missed, the student will continue around the circle again.	

KNOWLEDGES

The student should know how to enter, drive through, and exit from a traffic circle safely, as well as the regulations covering right-of-way. The right-of-way is generally given to the driver in the circle because to require him to stop would cause traffic in the circle to stop, thus impeding traffic and causing danger of a rear-end collision.

SKILLS

In entering a traffic circle, the driver must be able to judge "gap" or "lag" as in a right-hand turn. Once the circle is entered, the driver will frequently have to "sift through" traffic to move to the inside or outside of the circle, with skills that are similar to those involved in lane changing.

PURPOSE: To enable the student to safely enter a main roadway from an entrance ramp with or without an acceleration lane.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching and Entering On-Ramp		When entering the on-ramp the student will check to see if: ● The on-ramp feeds into the left or right side of the main roadway. ● There is an acceleration lane at the end of the on-ramp. ● Exit ramps or slow down lanes cross over or share continuing portions of the entrance ramp. He will observe the entrance-ramp/main-roadway configuration to aid in judging available merging distance and probable merging pattern. He will look briefly back over the left shoulder to check the location and speeds of traffic on the main roadway if entering it from the right. He will look over the right shoulder if entering the roadway from the left. Before attempting to merge he will check the location and speeds of lead vehicles on the on-ramp or acceleration lane. He will make initial car speed adjustment based on the on-ramp/roadway configuration and traffic conditions. When no traffic is present, he will continue on the on-ramp and enter the roadway.	When approaching and entering on-ramps the student will observe information signs indicating correct lane or ramp to use, speed limit signs, and warning signs.		
Preparing to Merge		When traffic is present when he is driving on an entrance ramp, the student will prepare to merge. In so doing he will: ● Use the on-ramp to accelerate to the speed of traffic on the main roadway if possible, checking the traffic ahead on the ramp and being prepared to stop or slow down if necessary.			

		● If approaching the main roadway from the right, check the mirrors and glance briefly over his left shoulder in order to view the entire roadway for traffic approaching from the rear. ● If approaching the main roadway from the left, check the rearview mirror over his right shoulder in order to view the entire roadway for traffic approaching from the rear. ● When approaching the main roadway from either side, compare the over-the-shoulder view with the mirror view to assure that entire roadway is visible. ● Select a gap in the traffic that will permit the car to merge without interfering with progress of other vehicles. ● If a gap is not visible and the ramp is short or has no acceleration lane he will: ●● Observe the ramp ahead. ●● View the main roadway, using mirrors if possible. ●● Stop at the end of the ramp if necessary to wait for an acceptable gap (See procedures for long ramp below)			
Long Entrance Ramp (Acceleration Lane) Procedures	The student will watch for vehicles leaving the main roadway. He will be especially watchful when driving on an acceleration lane that continues as an off-ramp for the main roadway traffic.	Procedures vary slightly when attempting to merge from a long entrance ramp (acceleration lane). When preparing to merge from a long ramp the student will: ● Use the acceleration lane to accelerate to the speed of traffic on the main roadway and, if practical, allow vehicles ahead to leave the lane before merging onto the roadway. ● When attempting to merge, if no gap is visible and the ramp has a long acceleration lane, he will hesitate on the beginning portion of the lane to await an acceptable gap, being sure not to stop on the acceleration lane. ● If a portion of the acceleration lane also serves as a deceleration lane for an off-ramp, he will signal his intention to enter the main roadway when reaching the common portion.			

(Continued)

PURPOSE: To enable the student to safely enter a main roadway from an entrance ramp with or without an acceleration lane *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Merging with Main Roadway Traffic	When entering the main roadway from an entrance ramp the student will: ● Signal his intention to merge onto main roadway early enough so that traffic on main roadway can swing into adjacent lane to permit entry if adjacent lane is empty. ● Observe the lead vehicle and gap through the side window. ● Check the following vehicle positions, using mirrors. ● Make speed adjustments to match speed of lead vehicle.	When approaching and entering the main roadway the student will: ● Adopt a speed that allows the car to reach the main roadway coincident with the gap. ● Recheck traffic on the main roadway by quick shoulder glances or by use of mirror(s) and check traffic ahead and behind on the ramp. ● Permit the vehicle ahead to leave the ramp before attempting to enter the main roadway, if practical. ● Drive within the borders, pavement markings, or curbings that divide the entrance ramp from the main roadway. ● Guide the car smoothly into the adjacent lane of main roadway adjusting the speed if necessary.	When entering the main roadway the student will do so at the earliest possible moment without sacrificing safety. He will avoid cutting in just ahead of a following vehicle on the main road even if it is necessary to reduce the distance from the lead vehicles.		

KNOWLEDGES

The student must know the procedures for safely entering the main roadway from an entrance ramp and the hazards involved.

On-ramps with short acceleration lanes tend to have high accident rates when the entrance speeds are high.

On-ramps with minimum acceleration lanes (less than 900 feet) tend to be more dangerous than on-ramps with longer acceleration lanes, because drivers tend to stop at the end of them rather than using them for acceleration.

On short on-ramps the majority of accidents occur on the ramp itself rather than during the merge. Most of the accidents on the ramps are rear-end collisions resulting from failure to notice that the lead car had slowed or stopped.

On-ramps, while apparently less dangerous than off-ramps, account for a moderate percentage of freeway accidents. Ramps without acceleration lanes, scissor ramps (opposing traffic crosses the on-ramp), and ramps entering on the left side speed lane are the most dangerous.

Stopping at the end of the on-ramp not only causes a bottleneck in the on-ramp traffic, but also forces entry to the main roadway at a dangerously slow speed compared to the through traffic speed.

SKILLS

The student must be able to:

Estimate the lag or gap size (see "Intersections") while travelling at a moderate or high rate of speed.

Have sufficient skill in steering to be able to maintain the proper path while taking his eyes off the roadway to observe traffic on the main roadway.

PURPOSE: To enable the student to exit safely from the main roadway.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Preparing to Leave Roadway		When nearing the exit, the student will make an early and smooth transition into the lane that leads to the exit. He will watch for an off-ramp and any off-ramp deceleration lane when preparing to leave the roadway.	When preparing to leave the roadway, the student will watch for signs indicating the distance to, and the location of, the desired exit.		
Approaching and Entering Off-Ramp		If a deceleration lane is provided the student will enter it as soon as safely possible after reaching the beginning of the lane. When a deceleration lane is also a part of an acceleration lane for vehicles entering the roadway, the student will watch for vehicles entering the lane and will adjust speed to accommodate any entering traffic. When a deceleration lane is not provided, he will check for roadway entrances near the off-ramp; he will watch for vehicles merging into and diverging out of the roadway and will adjust his speed to accommodate the entering traffic. He will guide the car smoothly onto the off-ramp.	When approaching and entering the off-ramp the student will: ● Signal his intention to turn onto the off-ramp. ● Slow down on the roadway unless a deceleration lane is provided, in which case the student will maintain speed on the roadway and will begin to slow down after moving into the lane. ● ● When a deceleration lane is not provided, the student will slow down no more than necessary to achieve a safe speed for entering the off-ramp. ● Look for posted signs indicating off-ramp speed limits.		

When on an Off-Ramp		The student will observe speed limit signs, if posted, when driving on the off-ramp. He will watch for other vehicles changing lanes. When nearing the end of the off-ramp he will slow down and prepare to stop.	When driving on the off-ramp the student will: ● Drive in the center of the off-ramp lane and stay clear of any barriers. ● Observe signs on cross roadways giving information on alternate destinations. ● Glance at the speedometer to be sure he is slowing down to a safe speed. ● When there are forks in the off-ramp roadway leading to alternate destination roadways, position the car in the lane leading to the desired destination. When nearing the end of the off-ramp he will watch for traffic that may be stopped or waiting in line at the end of the ramp.	The student will observe the general configuration of the interchange when driving on the off-ramp.	

KNOWLEDGES

The student must know that to do when preparing to leave the roadway, when approaching and entering an off-ramp, and when driving on an off-ramp.

More accidents occur on off-ramps than on on-ramps, due to (a) greater speed, (b) greater difficulty in controlling a decelerating car, (c) presence of fixed objects (primarily signs) along the outside edge of a curve.

Off-ramp accidents are more likely to occur at night and on ramps without deceleration lanes (e.g., direct cloverleaves), scissor ramps (a lane crosses the deceleration ramp), and ramps that exit from the left side of the road.

The major cause of left-hand off-ramp accidents is the driver's failure to enter the left lane early enough or attempting to exit from the center or right lane. Most left-side off-ramp accidents occur during the diverging phase.

Slowing down on the main roadway, while a major cause of all freeway accidents, is particularly critical in the case of left-hand exits. Faster speeds in the left-hand lane and the failure of drivers to expect deceleration in that lane are major contributing factors.

A significant number of all accidents on ramps involving fixed objects occur on off-ramps.

The design of exits and deceleration lanes is related to safety and driver requirements.

Off-ramps with gradual turns and long deceleration lanes are the safest. Those with moderate rather than sharp turns are the most dangerous. This may be due to the failure of drivers to recognize the danger as easily as they do when the off-ramp has a sharp curve.

The design of freeway exits is often complex. The directions of exits frequently vary markedly from expectation. Avoiding an incorrect exit or incorrect use of an entrance ramp requires close attention to signs.

Controlling a car's speed and movement into the proper lane at the correct time are very important when preparing to leave the main roadway.

Moving into the deceleration lane as soon as possible reduces the requirement for slowing down on the main roadway and minimizes the necessity for cutting in front of a vehicle that is already present in the deceleration lane.

SKILLS

The student must be able to judge from the length and curvature of the ramp the maximum speed at which the ramp may be entered in order to do so safely without obstructing following traffic by driving unnecessarily slowly.

Once on the ramp, he must be able to judge from the rate of curvature how much more he must slow down before entering the curve.

NORMATIVE INFORMATION

Drivers tend to underestimate speeds when decelerating after driving at high speeds. Glancing at the speedometer to ensure appropriate deceleration prior to entering the off-ramp enables the driver to become aware of an excessive rate of speed. A recent study showed that drivers averaged 10.5 miles per hour over an estimated 40 miles per hour after driving 70 miles per hour for 40 miles even though they were aware of adaptation and tried to avoid it. Significant adaptation to high speeds occurs after 15 to 20 minutes of driving.

PURPOSE: To enable the student to negotiate hills safely and effectively.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching Upgrades			The student will check the rearview mirror periodically for trucks or heavy vehicles that are approaching the upgrade at an excessive speed. When approaching an upgrade he will select the far right lane or auxiliary climbing lane (if available) if the car is underpowered or will be operating at low speed	The student may accelerate slightly if the car is not powerful enough to reach the top of the hill without increased power.	
Negotiating Upgrades		The student will downshift or move gear selector from "drive" to "low" if slow moving vehicles are observed on a long or steep upgrade ahead.		The student will maintain constant speed on upgrades by: ● Applying accelerator pressure. ● Shifting to lower gear if the car begins to vibrate. He will watch for signs of overheating, especially on long steep upgrades, and will do the following if car overheats: ● Downshift. ● Turn on heater.	
Approaching Crests		When approaching a crest on a narrow roadway he will keep far to the right. The student will slow down slightly when approaching a crest to compensate for limited sight distance and for an anticipated increase in speed upon reaching the crest.	When approaching a crest on a narrow road the student will sound the horn to alert oncoming vehicles.		
Approaching Downgrades			When approaching a downgrade the student will look for signs indicating length and/or gradient of downgrade. He will do the following prior to beginning a long and/or steep downgrade: ● Test the brakes. ● Slow down.	The student will shift into lower gear before beginning a long and/or steep downgrade.	

Negotiating Downgrades		The student will check rearview mirror periodically when negotiating downgrades to determine whether vehicles behind may be accelerating excessively.	The student will maintain constant speed on downgrades. In doing so he will: ● Reduce accelerator pressure. ● Apply the brakes partially throughout descent if necessary. ● Shift into lower gear on a long grade. When meeting a vehicle on a narrow downgrade he will yield the right-of-way to a vehicle on the upgrade and, if necessary, back into a safe turnout to allow the vehicle to continue.		
Approaching Bottom of Downgrades			When approaching the bottom of a downgrade the student will resume normal driving speed.	When approaching the bottom of a downgrade, the student will shift back into the normal driving range.	

KNOWLEDGES

The student should know:

Trucks generally must downshift near the crest of hills or long grades. This results in marked speed reduction.

Deceleration should be initiated prior to beginning the downgrade because if too much velocity is attained, it may be impossible to slow down on the downgrade.

To control speed, the car must be in gear, not coasting.

Continuous partial pressure on the brake pedal actually builds up less heat than intermittent pressure because hard initial application of the brakes creates heat that is not quickly dissipated when the brakes are released.

Testing the brakes before beginning a downgrade allows the driver to discover a possible brake failure before actually travelling on the downgrade. If the brakes do fail, preparation for slowing down or leaving the roadway can be made more rapidly and safely.

If the car begins to overheat near the top of a hill, turning on the heater will dissipate the heat in the radiator temporarily by cycling the radiator coolant through the car's heater unit.

Downshifting may sometimes be necessary when driving on hills.

Downshifting can increase pulling power to counter the effects of gravity and avoid stalling.

Downshifting will cause the fan to turn at a higher speed, drawing in more air through the radiator.

The additional braking provided by the engine in low gear (it must turn faster and therefore provides more resistance) reduces wear on the brakes. Riding the brakes builds up intense heat, which is damaging both to the brakes and the tires. On steep hills, the brakes may not have sufficient braking power.

SKILLS

The student must be able to judge when to downshift while climbing a hill from the car's responsiveness, as well as the engine sound and vibration.

PURPOSE: To enable the student to negotiate highway curves safely and comfortably.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching Curves		The student will watch for curves by observing the road ahead and by observing road signs. The student will approach curves at speeds that will enable the curve to be negotiated safely. In doing so he will: ● Observe the roadway ahead for signs indicating maximum safe entering speed. ● Reduce speed, if necessary, to attain the posted limit.	Before entering a curve, the student will glance briefly at the speedometer in order to verify that his speed does not exceed the posted maximum.		
Entering and Driving Through Curves		While entering and driving through a curve, the student will: ● Look well ahead to anticipate the need for steering corrections. ● Maintain a position within the lane (not change or "cut across" lanes). ● Maintain speed throughout the curve by keeping a slight pressure on the accelerator. ● Reduce speed by releasing the accelerator and applying the brakes lightly: ● ● Whenever initial speed proves too great for the rate of curvature. ● ● Whenever visibility is restricted by darkness, vegetation or other obstructions, fog, and so forth.	When leaving a curve, the student will resume the original or other safe speed.	The student may accelerate slightly during the curve if his entry speed proves to be slower than necessary.	

KNOWLEDGES

The student should know the following:

The potential dangers involved in driving through curves:

Excessive speed while entering curves was noted as a significant factor in approximately 8% of a group of 1,000 accident reports.

Collisions resulting from failure to maintain proper lane position on the roadway while negotiating a curve have been noted in a significant number of accident reports.

According to one study, the accident rates where sight distances are short (less than 800 feet) are more than twice that where sight distances are not limited.

Speed must be reduced when taking a curve owing to the limitation in sight distance and the tendency of centrifugal force to pull the car to the outside of the curve.

Posted speed limits for curves are generally close to the maximum safe and comfortable speed.

If a car enters a curve at excessively high speed, the rear end will tend to swing out and the front end will cease to respond to steering. Braking hard enough to lock the wheels will cause the car to run off the road in a straight line.

The chances of skidding are minimized by entering the curve slowly and maintaining a constant speed or accelerating slightly through the curve.

When traveling at high speed for a sustained period of time, it is difficult to estimate accurately the amount of speed reduction that is necessary. The driver should check the speedometer.

If a driver finds that he has entered a curve at too high a velocity, he should not attempt to brake but concentrate on steering to keep all the wheels on the paved surface.

While driving through a curve, the driver should focus on the farthest clear path of travel, i.e., he should "look through the curve". He should not fixate on the road immediately in front of him.

Moderately sharp curves are the most dangerous because drivers tend to underestimate the degree of curvature.

SKILLS

In adapting his speed to unposted curves, the student must be able to associate a visual perception of curvature and superelevation (banking) with visual, proprioceptive, and kinesthetic cues of speed. This perception appears to be mediated to some extent by kinesthetic cues of lateral acceleration, that is, the driver develops a "seat of the pants" feeling for what is the maximum speed at which he can take a particular curve.

NORMATIVE INFORMATION

In general, drivers attempt to maintain speeds through curves that produce between .2 and .3 g's lateral acceleration.

PURPOSE: To enable the student to select the appropriate lane for driving.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Lane Position		The student will drive in the far right lane, using the left lane(s) to pass. He will position the car in the center of the lane. He will attempt to stay in one lane as much as possible.	When driving on a roadway without painted lane markers, the student will assume a position on the roadway corresponding to the appropriate travel lane.		
Multilane Roadways		When driving on a six- (or more) lane roadway (or at least three lanes one way) the student will use the right lane when driving slowly, or when preparing to leave the roadway, unless the exit is located on the left side of the roadway.	When driving on a four-lane roadway (or two lanes one way) the student may elect to pass in the right lane if traffic in the left lane is stabilized. When driving on a six- (or more) lane roadway (or at least three lanes one way), the student will use the left lane to pass and the center lane for through movement. If traffic in the left lane is blocked or slowed considerably the student may pass in the center or right lane(s).		

KNOWLEDGES

The student must know the general rules regarding lane usage. Some states have limiting provisions on the usage of lanes for through movement on roadways with six or more lanes or at least three lanes one way. On such roadways the left and right lanes may be frequently stopped for vehicles turning onto the access roads. Generally keeping to the right avoids interfering with faster moving traffic.

PURPOSE: To enable the student to drive safely on different types of road surfaces; to enable the student to adjust his driving according to road surface conditions.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Road Surface Types		The student will observe the nature of the road surface materials. If driving on a dirt, gravel, wooden, or brick roadway surface, he will: ● Drive slower than when on a dry paved roadway. ● Avoid sharp turning movements ● Increase the following distance.	When driving on a dirt road, the student will watch for loose soil conditions and hazardous objects such as rocks, glass, and sharp metal objects embedded in the dirt. He will watch for loose gravel when driving on gravel roads. When driving on brick roads, he will watch for holes, bumps, cracks, loose bricks and slippery spots.	When driving on concrete or asphalt surfaces, he will anticipate a slick surface at intersections due to the polishing effect of traffic. When driving on a wooden surface, he will watch for cracks, holes, and nails.	
Surface Irregularities		The student will observe the roadway surface for defects and irregularities caused by weather and/or general road deterioration. When signs indicate poor road conditions ahead he will reduce speed before reaching the areas.	When driving over bumps, washboard conditions, potholes, or cracked pavement, the student will reduce the car speed and anticipate additional defects.		
Avoiding Potholes		The student will check the roadway traffic to ensure that lateral movement of the car will not interfere with other traffic when positioning the car within the lane to avoid a pothole. When positioning the car to avoid a pothole, he will use the turn signal only if it is necessary to change lanes.	When a pothole is observed to the immediate front of the car, the student will reduce speed prior to reaching it and will attempt to steer the car so that the car wheels do not go through it. When driving through a pothole is unavoidable, he will: ● Apply the brakes to slow the car down before reaching the pothole, releasing the foot brake while going through the pothole. ● Grasp the steering wheel firmly and make corrective steering movements to maintain straight direction of the car.		

KNOWLEDGES

The student must know how road surfaces can affect driving, and how to drive on roadways with surface irregularities.

Loose or slick surfaces increase stopping distance and raise the likelihood of skidding.

Skid resistance of street surfaces is often low at intersections because of the polishing effect of traffic.

Driving safely through potholes and ruts requires special care.

Continued application of the brake may lock the wheels and transfer an excessive amount of roadshock to the car when passing through the pothole or rut. Much of this shock is absorbed by the wheel if the brakes are released just prior to passing through the road surface irregularity. Therefore brakes should be applied before reaching the pothole or rut and then released to minimize the amount of roadshock transferred to the car.

When driving through ruts in gravel or dirt roads the following procedure should be followed:

The car speed should be reduced.

The driver should assess the road surface characteristics adjacent to the rut and the depth of the rut. If the rut is deep or the adjacent surface is firm and compact, the rut should be avoided if at all possible.

If it is necessary to drive through the rut, the steering wheel should be grasped firmly, and the student should proceed slowly. The wheel should be turned at a sharp angle when exiting the rut in order to provide sufficient lateral force to overcome the resistance exerted by the edge of the rut.

SKILLS

In leaving a rut the student must be able to judge how far to turn the wheel so as to climb out of the rut without swerving excessively. He must be able to countersteer quickly to avoid leaving the roadway or striking something.

PURPOSE: To enable the student to drive safely on a wet surface.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Anticipating Slippery Surfaces		The student will watch for slippery surfaces during the first few minutes of a rainfall, due to the mixture of water with oil that is present on the roadway. He will watch for areas of the roadway which are soaked with oil or grease. He will slow down before reaching a bridge or culvert in wet weather at near freezing temperatures, since such areas are likely to freeze before the roadway and be quite slippery.	The student will avoid oil-soaked areas if possible. If necessary he will drive through them slowly to avoid skidding. When approaching a roadway covered with wet leaves, he will slow down prior to reaching the area and will drive through the area maintaining speed and direction with as little change as possible.		
Driving on Wet Surfaces	When driving on a wet surface, the student will allow for required increased stopping distance by not following lead vehicles as closely as usual.	The student will take special precautionary methods when driving on a wet surface. In so doing he will: ● Drive slower than when driving on a dry surface. ● Increase the lateral distance. ● Maintain a smooth, even acceleration altering speed gradually when necessary. ● Avoid quick turns, sharp braking, or downshifting. ● Slow down further in advance of intersections, curves, and downgrades than is normally the case. ● Adjust the above precautions to the level of surface friction. ● Test the brakes periodically by pumping the pedal lightly.	The student will follow the tracks of other vehicles when driving on a wet roadway, if possible.		
Preventing Hydroplaning		When the water depth exceeds the tire tread depth on a wet roadway, the student will: ● Drive at a slower speed. ● Slow down as soon as the tires make a slushing sound to prevent hydroplaning. ● Further increase the following distance when behind large trucks.			

		● Slow down by easing pressure on the accelerator until the tires regain traction if the car begins to hydroplane.			
Driving Through Deep Water		If possible, the student will steer the car around a roadway which is partially or totally covered by deep water. After driving through deep water he will apply the brakes to see if they are operating properly. If they are not, he will attempt to dry them. In doing so he will: ● Drive for a short distance with the right foot on the accelerator pedal and the left foot lightly depressing the brake pedal. ● Recheck the brake response to see if the brakes have dried and are operating normally. ● Repeat brake drying procedure until brake response is normal.	When deep water partially or totally covers the roadway, the student will slow down before reaching the area. He will proceed slowly and in low gear when it is necessary to drive through deep water.		

KNOWLEDGES

The student must be aware of hazards created by wet roads and the precautionary measures known to maximize safety when driving on wet surfaces.

Thirty percent of all accidents and 20% of all fatalities occur on wet, icy, or snowy roads.

Slippery surfaces accounted for 13% of Route 66 accidents.

Failure to modify driving behavior in order to compensate for wet, slick surfaces was a contributing factor in 100 out of 1,000 accident reports recently surveyed.

A study of accidents on the Pennsylvania Turnpike showed a substantially higher accident rate for wet roadway conditions as compared with dry roadway conditions. The accident rate for wet roadways was almost double the dry roadway accident rate.

Slightly more than 11% of a sample of 119 one-car accidents in Michigan were caused by steering abruptly on wet surfaces.

Foreign substances such as oil and leaves increase the dangers of driving on a wet surface.

The presence of water increases the stopping distance and the probability of skidding. Allowance should be made for 50% more required stopping distance when the pavement is wet.

Oil film on the roadway combines with rain to create a slick surface.

Water on a bridge or culvert will freeze more quickly than that on the surrounding roadway. The temperature of water on the surrounding roadway is somewhat stabilized by the ground beneath it.

Wet leaves are nearly as slippery as ice, especially on blacktop surfaces.

Water on the engine ignition system may cause the engine to stall.

Hydroplaning can occur when water depth, roadway conditions, car speed, or condition of the tires prevent the tires from penetrating the surface water and making contact with the road surface. The lack of traction greatly increases stopping distance and the chances of skidding. When hydroplaning, the front wheels are actually water skiing on a very thin film of water. The student should not use the brake when hydroplaning. Braking would cause him to lose control of the car.

Lack of tire tracks from other vehicles indicates a "hydroplaning" condition. Tracks are a result of partial displacement of the surface water.

Good conventional tread tires have a squeeze effect on a wet pavement. Slick or smooth tires do not and, therefore, hydroplane more readily.

When tire inflation pressures are between 16 and 30 psi, the corresponding minimum speed range for full hydroplaning is about 40 to 57 miles per hour. Once the tire becomes completely waterborne, stopping distance capability is lost.

The loss of traction caused by hydroplaning also renders steering control nearly totally ineffective. Under these circumstances, a small disturbing force (road irregularity, curve, or crosswind) will cause complete loss of directional stability.

Generally, large vehicles with tires that require higher inflation pressure are less likely to hydroplane than smaller cars. Following such a vehicle closely is dangerous since the car may be hydroplaning and collide with the larger vehicle if it slows down.

Driving at moderate speeds reduces the hazard of spot hydroplaning, in which one or more tires are briefly, but fully, waterborne with no traction as the car passes through puddles. Risk of losing directional stability is high in spot hydroplaning conditions.

Accelerating and braking should be done carefully and gradually when driving on a wet surface.

On slippery surfaces, major acceleration changes may spin the rear wheels and cause the car to start skidding.

Taking the foot off the accelerator suddenly on slippery surfaces may create an effect similar to the application of the brakes.

The sudden introduction of engine braking power can cause the car to skid. This can be avoided if the car is moving slowly at the time of shifting.

Brake failure can occur if the brake linings become wet. After driving through deep water the brakes can be tested by occasionally tapping the brake pedal. If the brakes fail because of moisture, all brakes fail including the front wheel, rear wheel, and parking brake.

Braking power is reduced when the brake linings have moisture on them; continued application of the brakes will dry the linings.

SKILLS

The student must develop the ability to limit pressure on the brake pedal to come to a safe stop on a wet surface without skidding.

PURPOSE: To enable the student to deal effectively and safely with road shoulders.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Shoulder Condition		The student will periodically observe the condition of the shoulders including width, surface condition, alignment with pavement, and presence of obstructions such as signs and guardrails. When the shoulder is potentially hazardous to drive on, or if there is no shoulder, the student will maintain precise steering control and will drive slower than usual. If it is necessary to leave the roadway, see objective related to leaving traffic.			
Wheel Off Pavement		If one or two of the wheels accidentally drop off the pavement edge the student will: ● Grasp the steering wheel firmly to keep the car traveling straight ahead, but not try to bring the car back to the pavement immediately. ● Reduce the speed gradually by easing his foot off the accelerator pedal. Avoid braking if possible. If braking is required, he will pump the brake gently. ● Check the roadway ahead, to the side, and to the rear of the car. ● Turn the wheels sharply to climb the pavement after speed has been reduced.			

KNOWLEDGES

The student must know the effect that a roadway shoulder has upon operation of the car.

A vertically misaligned road edge will tend to turn the front wheels. A vertical rise will turn them away from the roadway; a vertical drop-off will turn them toward the roadway.

An attempt to stop the car abruptly when one wheel is off the roadway might put the car into a skid.

If an attempt is made to regain the roadway too sharply, the car might cross to the far lane(s) or swing sideways and roll over.

Failure to bring the car under full control before attempting to regain the roadway was noted as a cause in 37% of a sample of accident reports surveyed.

SKILLS

The student must be able to:

Avoid the natural tendency to apply the brakes when his wheels are on the shoulder.

Judge from the condition of the shoulder how much his speed must be reduced before attempting to regain the roadway.

Maintain control of the car when necessary to regain the road before reducing to a safe speed.

Judge the best place and angle at which to return to the roadway.

Countersteer upon returning to the roadway to avoid crossing to a far lane.

PURPOSE: To enable the student to deal safely with roadway obstructions and barricades.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Objects on Roadway		The student will reduce speed and will proceed cautiously when posted signs or physical terrain conditions indicate a high probability of encountering objects on the roadway. When steering around an object requires driving in the opposing lane, he will wait for a break in the opposing traffic before proceeding. He will not use the horn to try and stop opposing traffic.	The student will watch the roadway well ahead for objects such as rocks, glass, fallen branches, and debris. After prolonged or heavy rains he will watch for large puddles and riverlets and will check for rockslides and debris, particularly in the outside lane. When objects are detected on the roadway he will: ● Slow down before reaching the objects. He will straddle or steer around them depending upon their size and location. ● Avoid sudden or large turns that might result in a skid. ● Avoid driving over a fire hose unless instructed to do so by fire department official. ● Maintain a reduced rate of speed until clear of object(s).		
Construction and Barricades		The student will drive at a reduced speed, will check for flagmen and detour instructions, and will prepare to stop if necessary when approaching an area of roadway repair or a barricade.	When driving through an area of road construction or repair, or going around a barricade, the student will follow flagmen's signals and detour instructions.	The student will look for warning signs indicating roadway obstructions, construction, or road repairs ahead. He will listen for sounds such as air hammer chatter or heavy machinery in operation denoting roadway construction or repair work. He will watch for movement of men, trucks, and heavy equipment indicating road work ahead.	

		He will maintain a reduced rate of speed and will observe movements of men and machinery when in construction areas. He will resume a normal speed only after passing through the affected area. He will note flagmen or signs indicating return to normal conditions.	

KNOWLEDGES

The student should know that the appearance of road construction or barricades indicates the presence of workmen and equipment which may enter the roadway unexpectedly. Even in the absence of men and equipment a hazard is created by debris, sudden detours, or mispainted lines.

PURPOSE: To enable the student to drive, stop, and park safely on ice- and snow-covered roadways.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Precautions for Driving on Snow or Ice	When driving on a snow- or ice-covered surface, the student will allow for required increased stopping distance by not following lead vehicles as closely as usual.	The student will take special precautionary methods when driving on a snow- or ice-covered surface. In so doing he will: ● Drive slower than when driving on a dry surface. ● Increase the lateral distance. ● Maintain a smooth, even acceleration, altering speed gradually when necessary. ● Avoid quick turns, sharp braking, or downshifting. ● Slow down further in advance of intersections, curves, and downgrades than is normally the case. ● Observe vehicles approaching on side streets, especially their wheels, to see if the vehicles are skidding. ● Watch for children sledding or playing in the snow or on the ice in residential areas. ● Adjust the above precautions to the level of surface friction.	When driving on a snow- or ice-covered roadway, the student will take precautions as listed under the corresponding criticality level of the objective pertaining to driving on a wet surface. When the roadway is covered with snow, the student will use emergency snow routes only if the car is equipped with snow tires or chains. If using chains on the rear wheels he will drive with them until the road surface is appreciably clear of ice and snow. When driving with chains on rear wheels he will maintain a speed which is safe for existing conditions.	The student will stop after a short distance to retighten or adjust tire chains and will remove them only after the roadway is clear of snow and ice.	
Starting on Snow-Covered or Slippery Surfaces			When starting the car in motion on an icy roadway, the student will use materials such as sand, salt, cinders, traction mats, or rags in back of and in front of the rear wheels to get better traction.		

			When starting the car on a snow-covered or slippery surface he will: ● Place the gearshift in second or high gear (manual shift car) or in drive (automatic shift car). ● Release the clutch slowly (manual shift car). ● Depress the accelerator gently. ● Hold the accelerator pedal steady until the car picks up speed. The student will straighten the front wheels when starting the car in motion on a snow-covered or slippery surface. The student will start the car in motion on a snow-covered roadway by backing up a few feet and starting forward in the same tracks; he will pass through the hump of snow at the end of the tire tracks before attempting to turn. Once the car is in motion he will accelerate slowly to minimize rear wheels spinning on the slick surface. When on a snow-covered or slippery surface he will test the brakes gingerly to get an idea of the road condition.		
Driving and Stopping on Snow-Covered Roadway	When stopping the car in snow the student will allow enough room to come to a stop and will brake early.	When attempting to stop the car in snow the student will: ● Apply a series of pumping motions on the brake pedal to reduce the chances of locking the brakes. ● Look for bare pavement or loose snow where better traction will be likely. ● Avoid traffic packed snow if possible. ● Drive into a snowdrift if an emergency stop is required.	When driving through deep snow, the student will shift into lower gear before entering the snow and will attempt to keep the car moving through the snow. When stopping the car in snow, he will avoid stopping on an upgrade if possible; he may stop before reaching the upgrade to avoid stopping on the upgrade.		

(Continued)

PURPOSE: To enable the student to drive, stop, and park safely on ice- and snow-covered roadways *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Stuck in Deep Snow			If the car is stuck in deep snow or in a snowdrift, the student will not remain in the car with the windows shut and the engine running thus risking the effects of carbon monoxide which may seep back into the car.	If the car is stuck in deep snow or in a snowdrift, the student will: ● Use a shovel or other implement, such as the baseplate of the jack, to remove snow from in front of and behind each wheel. ● Remove snow from around the tail pipe area.	
Parking in Heavy Snow Conditions			When parking in heavy snow the student will: ● Reject a parking space that would cause the car to impede traffic by projection onto the traveled portion of the roadway. ● Reject a parking space on a grade where a downgrade exit is not possible.	When parking in heavy snow, the student will look for painted curb and surface markings that restrict or outline parking space boundaries.	
Driving and Stopping on Ice-Covered Roadway	If driving on ice at about freezing temperatures, the student will approach curves and intersections more slowly than usual. If the ice is melting on the roadway, he will increase his following distance to compensate for a more slippery surface.	If the ice is melting on the roadway the student will: ● Reduce the car's speed. ● Check for ice patches near shaded areas, especially under or on top of bridges. ● Watch for areas where direct sunlight may have accelerated melting, causing an especially slick surface. ● Avoid passing in the far left lane on multilane roads because the passing lane is more likely to have ice patches than the outside lanes.			

		When encountering patches of ice on the roadway he will: ● Slow down before reaching the icy area. ● Avoid applying the brakes and maintain a constant speed while crossing the icy area. ● Steer straight while driving through the patch of ice. ● Watch for additional patches of ice. The student will pump the brake pedal rapidly to reduce the chances of locking the brake and skidding. If attempting to stop on ice, he will apply steering corrections while his foot is off the brake.	When attempting to stop on an icy surface in a manual-shift car, he will depress the clutch when the car is almost stopped to reduce the chances of skidding.		
Snow- or Ice-Covered Grades		If driving on snow- and/or ice-covered grades, the student will maintain constant speed or accelerate slightly on the approach to an upgrade. He will maintain constant pressure on the accelerator on the upgrade to avoid spinning the wheels. He will slow down in advance of downgrades, downshifting if necessary to minimize the need for downhill braking.			

KNOWLEDGES

The student must know the hazards involved in driving on ice- or snow-covered roadways.

Heavy traffic will tend to polish ice, making the ice warmer.

Ice at 30° Fahrenheit is much more slippery than ice at 0° Fahrenheit.

Patches of roadway where ice is covered by a thin layer of water are extremely slick.

Patches of ice tend to linger in shady areas.

When most of the roadway is covered with snow or ice, sunny areas are more slippery than the rest of the road surface because of the melting ice.

Passing lanes are more likely to have patches of ice and snow than the outside lanes where the heavier traffic wears off ice and snow faster. Cars require more traction during the passing maneuver and could possibly obtain less traction in the passing lane.

The hazards involved when driving on an icy or snow-covered surface are apparent in accident statistics.

Thirty percent of all accidents and 20% of all fatalities occur on wet, icy, or snowy roads.

Failure to modify driving behavior in order to compensate for wet, slick surfaces was a contributing factor in 10% of the accident reports recently surveyed.

A study of accidents on the Pennsylvania Turnpike revealed a substantially higher accident rate for icy and snow-covered roadway conditions as compared with dry roadway states. The accident rate for icy roadways was eight times the dry roadway accident rate. The accident rate for snow-covered roadways was five times the rate for dry roadways.

Patches of ice or snow on the roadway cause about one-third of the accidents on ice or snow-covered roadways.

When weather conditions become bad special local regulations may require the use of snow tires or chains on snow emergency routes.

Arterial roadways where obstructed by a vehicle stuck in the snow can create extensive delays.

In addition to providing better traction, snow tires and chains can reduce stopping distance. However, any advantage chains may have with regard to traction and stopping distance can be negated by driving too fast for conditions.

Special procedures are required when driving on snow or ice-covered roadways.

On accumulated snow or ice, keeping the front wheels straight reduces the car's resistance to motion and therefore reduces the chance that the rear wheels will spin when power is applied. Also, the front wheels make a path for the rear wheels, making it easier to move into a plowed traffic lane. The wheels may be turned after the car has gained enough speed.

Higher gears are best to use when starting on snow or ice because they apply less power to the rear wheels and reduce the chance of the wheels spinning.

Smooth steady acceleration minimizes rear wheel spinning.

While operation in high gear provides greater friction, the resistance created by *deep* snow requires more power to be applied to the rear wheels. Low gear increases the power to the rear wheels and lessens the strain on the engine.

Driving on any icy or snow-covered pavement is always dangerous, but especially when other traffic is present. The location where traffic is most concentrated is at intersections.

Reducing speed well in advance of an intersection helps assure that the stop will be made prior to the intersection. In addition, snow or ice tends to remain longer near intersections, due to the effects of plowing and the reduced speed of vehicles passing through.

If the wheels of approaching vehicles are turning, the driver probably has control of the vehicle. If the wheels are locked and sliding, the driver probably does not have control and is likely to slide through the intersection.

Slick surfaces increase the probability of skidding when braking, changing speed or changing direction. The wheels are likely to spin on a slippery surface when the power is applied also.

Stopping on an upgrade in snow increases the likelihood that the wheels will spin when the power is subsequently applied because of the effect of the slope and poor traction.

The chances of skidding when driving on an icy surface can be minimized by pumping the brakes since this allows the wheels to revolve intermittently. Jamming on the brakes causes the wheels to lock, which is conducive to skidding.

In addition, depressing the clutch prior to stopping also reduces the chances of skidding.

Engine friction will not cause the wheels to lock as the brakes would, reducing the likelihood of a skid.

Potential hazards and problems accompany snow and cold weather:

Hot exhaust creates a pocket in the snow in which carbon monoxide can accumulate instead of blowing away. This increases the chances that carbon monoxide will seep into the car.

Snow forced up the tailpipe may stall the engine.

When the parking brake is frozen it can be released by carefully backing the car a few feet. The car should be moved forward only after the brake is released; otherwise the automatic transmission or the clutch may be damaged.

SKILLS

The student must be able to:

Brake gently without going into a skid in order to drive safely on an icy or snow-covered roadway.

Regulate pressure on the accelerator pedal so that the rear wheels will not spin when he attempts to move forward or backward on an icy or snow-covered roadway.

PURPOSE: To enable the student to drive safely on sand-covered roadways.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Encountering or Avoiding Sand		When sand drifts are on the roadway, the student will steer around them, if possible, rather than driving through them. If it is necessary to go through the sand drift he will shift into a lower gear prior to reaching the drift and attempt to keep the car moving through the drift.			
Driving on Sand	When driving on a sand-covered surface, the student will allow for required increased stopping distance by not following lead vehicles as closely as usual.	The student will take special precautionary methods when driving on a sand-covered surface. In so doing he will: ● Drive slower than when driving normally. ● Increase the lateral distance. ● Maintain a smooth, even acceleration, altering speed gradually when necessary. ● Avoid quick turns, sharp braking, or downshifting. ● Slow down further in advance of intersections, curves, and downgrades than is normally the case. ● Adjust the above precautions to the level of surface friction.			
Car Becomes Stuck		If the car becomes stuck in the sand drift, the student will rock the car out of the drift by alternating between low gear and reverse.	If the car becomes stuck in the sand, the student will keep the front wheels straight. He will place boards or heavy cloth in front of and in back of the rear wheels before attempting to drive the car out of a sand drift.		

KNOWLEDGES

The student must know how to negotiate sand-covered highways.

Driving through a sand drift is similar to driving through deep snow.

When attempting to drive through drifts it may be necessary to use lower gears to increase power.

SKILLS

The student must be able to downshift smoothly at the proper time in order to keep the car moving through a sand drift.

PURPOSE: To enable the student to perform a U-turn where legally permissible.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		While completing a U-turn, the student will check traffic, particularly rear-approaching vehicles.	When preparing to make a U-turn the student will check for oncoming and rear-approaching traffic and will wait until the roadway is clear before beginning the turn. He will turn on the left-turn signal before beginning a U-turn. He will accelerate slowly while starting the U-turn and will steer the car into the right-hand lane. He will straighten the front wheels and will accelerate in order to merge into the traffic pattern, after checking traffic.	The student will check for signs that prohibit U-turns. When U-turns are prohibited, the student will make three right turns and one left turn or one left turn and three right turns to proceed in the opposite direction. When driving a manual-shift car he will shift into first gear before beginning the turn. He will use the hand-over-hand technique to turn the steering wheel to the left when making a U-turn.	
Mid-Block		When making a U-turn at mid-block the student will select a location far enough from the intersection to avoid impeding other traffic.		The student will position the car close to the right-hand curb before initiating a U-turn in the middle of the block.	
Urban Intersections or Divided Highways			When making a U-turn at urban intersections or on divided highways, the student will: ● Position the car in the lane nearest the center of roadway. ● Stop at and scan the intersection for possible hazards. ● Move slowly toward the center of the intersection. ● Turn left sharply as the front wheels enter the middle of the intersection.		
Residential or Narrow Street Intersections				The student will use the cross street to gain a wider turning arc when making a U-turn at a residential or narrow street intersection. In so doing he will: ● Veer to the right before turning sharply to the left.	

- Steer toward the opposite side of the cross street for continuous turning movement.
- Pull back onto the roadway.

Near crests or curves the student will generally make U-turns only if the car can be seen from 500 feet by oncoming vehicles.

KNOWLEDGES

The student must know the procedures for making a U-turn and the local restrictions regarding U-turns. The latest *recommended* change in the Uniform Vehicle Code limits U-turns to the middle of the block to avoid possible collision with vehicles turning into the street.

SKILLS

The student must be able to judge whether there is enough room to make a U-turn given the turning radius of the car.

PURPOSE: To enable the student to turn around by means of a three-point turn, or a two-point turn using a driveway.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General				When preparing to make a "Y" (three-point turn), or a two-point turn using a driveway, the student will check for rear-approaching traffic and oncoming traffic and will wait until it is safe to begin the turn. Where three-point or two-point turns are prohibited, the student will make three right turns and one left turn, or one left turn and three right turns, to proceed in opposite direction.	
"Y" or Three-Point Turn			The student will turn left, back up and move forward, to make a "Y" or three-point turn. In doing so he will: ● Accelerate slowly and turn the steering wheel sharply to the left. ● Turn the steering wheel sharply to the right just before reaching the opposite curb and stop in advance of the curb. ● Check traffic and back toward the opposite side of the street, turning the steering wheel sharply to the left while backing. ● Stop before reaching the curb. ● Shift back to drive or first gear, accelerate, and steer into the proper lane.	When making a "Y" turn the student will check the curb height and will select a spot free of trees, poles, hydrants, or other fixed objects near the curb.	
Two-Point Turn			When making a two-point turn using a driveway the student will: ● Drive past the driveway and then back into it. ● Avoid turning around by moving forward into the driveway and backing into traffic. ● Check for traffic to the left and right and turn left into the roadway when it is safe to do so.		

KNOWLEDGES

The student must know the sequence of steps for making a three-point or two-point turn and when it is advisable to make such a turn.

Three-point turns (Y-turns) are usually made on streets too narrow for U-turns.

When making Y-turns the tail pipe could be broken if backing over a high curb.

The car's front and rear extend well over the curb before the tires touch it, and objects such as poles and hydrants on or near the curb are hard to keep in sight while backing and turning.

Completing turns by forward movement into traffic is a safer maneuver than backing into traffic.

PURPOSE: To enable the student to approach and enter off-street areas in a safe and efficient manner.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching Off-Street Areas		When approaching an entrance to a driveway, alley, or parking lot from the left the student will: ● Give the signal for a left turn before reaching the entrance and position the car in the lane just to the right of the center line or in the center lane on a three-lane road if permitted. ● Yield to oncoming traffic.	When approaching an entrance to a driveway, alley, or parking lot from the right the student will signal a right turn before reaching the entrance and will pull to the right edge of the roadway.		
		He may cross the double yellow lines or undivided four-lane road when approaching an off-street area entrance from the left.	If intending to turn into an entrance immediately beyond an intersection, he will activate the turn signal when the car is halfway through the intersection so that following vehicle drivers do not interpret the signal as an indication to turn at the intersection.		
		He will watch for other traffic entering or exiting driveways, alleys, and parking lots.	He will not stop or impede traffic unnecessarily when approaching entrances to driveways, alleys, and parking lots.		
			He will look for signs or entryway markings indicating the direction of travel.	The student will look for specific entrance and exit designations, such as curbing or other entry markers or structures, when approaching off-street area entrances.	
			He will adjust the position of the car to provide the proper clearance for entering driveways, alleys and parking lots.		

Entering Off-Street Areas		When turning into an off-street area entrance, if a stop is necessary the student will stop only after the car is completely through the entrance way and well off the main roadway.	Before entering a driveway, alley, or parking lot the student will check to see that it is clear of vehicles, pedestrians and objects and, if necessary, will remove objects before entering. He will maintain a safe entrance speed when turning into an off-street area entrance. He will avoid stopping immediately after entering an off-street area entrance unless required. When backing into a driveway the student will: ● Signal a right turn before reaching the driveway and drive to the right edge of the roadway. ● Slow down, proceed past the driveway, noting whether driveway is free of pedestrians and objects, and stop when the back end of the car is in line with the near edge of the driveway. ● Remove objects from the driveway if necessary. ● Check rear-approaching traffic and when clear, back into the driveway (see Educational Objective on backing up).	The student will check parking instructions upon entering a commercial parking lot or parking area requiring parking fees.	

KNOWLEDGES

The student must know the procedures for approaching and entering off-street areas.

Signalling prior to an intersection may be confusing to drivers in following vehicles who may interpret the signal as an indication of intent to turn at the intersection.

Accident reports reviewed indicate a number of accidents were the result of a driver's failure to yield to oncoming traffic prior to turning left into an off-street area.

Reducing speed inordinately or stopping will impede traffic flow. It will also increase the chances of a rear-end collision because following vehicles will not expect a speed reduction.

Upon entering the off-street areas a speed of between 5 and 15 miles per hour represents a safe speed. Speeds greater than 15 miles per hour may prevent reacting properly to hazards that suddenly appear. Speeds below 5 miles per hour may impede following traffic and result in obstructing the flow of traffic on the main roadway.

"Swinging wide" that is, moving to the left before turning right may be interpreted by a following vehicle as a lane change and the vehicle may attempt to pass on the right.

PURPOSE: To enable the student to drive safely in and around off-street areas without impeding traffic flow.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General Surveillance	When driving in off-street areas, the student will watch for children playing or darting into the path of the car from behind vehicles, structures, or vegetation.		The student will watch for vehicle and pedestrian traffic in or crossing the car's path when driving in off-street areas. He will watch out for toys, objects, and debris in the car's path when driving in off-street areas.		
Driving in Off-Street Areas		When driving in an alley, the student will check for traffic entering the alley from adjoining driveways.	If the student meets an oncoming car in a driveway, alley, or in a parking lot lane, he will edge over to the extreme right side of the roadway to permit the vehicle to pass by if sufficient clearance exists for two vehicles. If he meets an oncoming car in a driveway, alley, or in a parking lot lane and sufficient clearance for two vehicles to pass by each other is not available, he will: ● Yield the right-of-way to the oncoming vehicle. ● Pull into adjoining driveway or turnout if one is available. ● Back up to permit the oncoming vehicle clear passage.		
		When driving in a parking lot, the student will watch for vehicles backing up to leave or enter a parking space.	When driving in a parking lot, the student will drive only in the direction indicated by aisle markings or signs, and will watch for vehicles and pedestrians that may be entering or crossing the traffic aisle from any direction.	The student will drive only in travel aisles when driving in a parking lot.	

Leaving Off-Street Areas		When leaving off-street areas when facing traffic the student will: ● Signal his intention to turn. ● Bring the car to a complete stop before entering the roadway if no traffic signal is present. ● Yield the right-of-way to traffic on the roadway before entering.	The student will check for markings or signs indicating designated exits when leaving off-street areas. He will leave an off-street area exit facing traffic if possible.		
Backing Onto Roadway		If backing towards the right onto the roadway from the driveway the student will: ● Check for roadway traffic approaching from the right and, when the road is clear of traffic, back into the near lane close to the curb. ● If rear-approaching traffic is near, wait until it passes and then accelerate slowly while positioning the car in the center of the lane. If backing left onto the roadway from the driveway the student will: ● Check the traffic in both directions. ● Wait until roadway is clear in both lanes (see Educational Objective on Backing Up).	When backing right onto a roadway from a driveway the student will use the lane closest to the curb, when the road is clear of traffic. If backing left onto the roadway from the driveway the student will back left only on two-lane roadways. When backing left onto a roadway from a driveway he will back up quickly but cautiously.		

KNOWLEDGES

The student must know that slower speeds are required when driving in off-street areas because of the random movement of vehicle and pedestrian traffic and the limited visibility due to parked vehicles.

In a sample of 50 parking lot accidents approximately 15% resulted from failure to drive in marked traffic aisles.

Failure to yield to all cross traffic prior to exiting an off-street area and entering the roadway was noted in a moderate percentage of the accident reports surveyed.

PURPOSE: To enable the student to safely cross railroad crossings and to respond to possible dangers at such crossings.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		The student will watch for advanced circular warning signs along the roadway, road markings, or other physical indications that a railroad crossing is immediately ahead. He will: ● Slow down and prepare to stop at the crossing unless a clear view of the tracks is available. ● Prepare to stop if following a school bus, commercial passenger vehicle, or tank truck.			
Approaching and Stopping	The student will bring the car to a complete stop when approaching a signalized railroad crossing if the signal is activated. When stopped at the crossing he will: ● Remain stopped until the signal indicates the track is clear.	When approaching a railroad crossing with no signal, the student will look in both directions quickly and if a train is approaching he will stop the car within 50 feet but not less than 15 feet from the nearest rail.	When approaching a railroad crossing with no signal, the student will look in both directions quickly and if visibility is clear and no trains are in sight he will maintain speed and cross immediately. When stopped at a multi-track, no-signal railroad crossing, the student will: ● Cross the tracks if no trains are approaching. ● If waiting for an approaching train, remain stopped until the first train has completely cleared the crossing and the view is clear in both directions on the other tracks. ● Remain stopped if other trains are approaching. When approaching a signalized railroad crossing in which the signal is not activated the student: ● Will listen for the sound of an approaching train and look in both directions before crossing the tracks.	The student will proceed to cross the tracks at a crossing without a signal only after the train has completely cleared the roadway.	

	• Proceed across tracks only after obtaining a clear view of all tracks in both directions. • Proceed across the tracks in spite of activated signal after checking both directions of all tracks if no train is approaching or if a single train is approaching at a slow rate of speed at some distance.	When stopped at a signalized crossing the student will proceed across the tracks if a flagman motions him to do so.	• May proceed without stopping if no train is coming, the train is stopped at a distance, or the train is moving slowly at some distance.		
Crossing Tracks			When crossing railroad tracks, the student will not stop on the tracks or between separated tracks. He will not enter the crossing until sufficient space on the other side of the tracks exists for a car to stop completely clear of the tracks. He will take preventive action against possible stalling and avoid abrupt or jerky movement of the car when crossing tracks at a low speed. In doing so he will: • Start across tracks in low enough gear in a manual transmission car to decrease the chance of stalling. • Maintain a steady pressure on the accelerator pedal. If a flashing signal or an automatic gate is activated while the car is crossing the tracks, he will continue through the crossing as quickly as possible without stopping.	The student will not attempt to shift gears until completely beyond the crossing area.	
Stalled Car on Tracks			If the car stalls on the tracks while crossing, the student will: If time permits, • Attempt to start the car. • Use the starter in a manual transmission car as a last resort in an attempt to move the car off the tracks. If the train is close and rapidly approaching, • Instruct passengers to leave the car immediately and to clear the area.		

(Continued)

PURPOSE: To enable the student to safely cross railroad crossings and to respond to possible dangers at such crossings. *(Continued)*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Stalled Car on Tracks *(Continued)*			● Immediately leave the car and seek a safe area away from tracks and car.	If the car stalls on the tracks while crossing and will not restart, the student will push the car off the tracks manually, if possible, when no imminent danger exists.	

KNOWLEDGES

The student should know the hazards involved in crossing railroad tracks.

Accident statistics:

Approximately 1,600 persons were killed and 4,000 persons were injured at railroad crossings in 1968.

One-third of car-train accidents involve the car striking the locomotive or part of the train behind it.

Sixty percent of car-train accidents happen in daylight usually at a familiar crossing.

State laws generally require school buses, tank trucks carrying explosives or flammable liquids, and commercial carriers to stop for railroad crossings except under certain specified conditions.

Approximately 180,000, or 80% of the nation's railway grade crossings have only signs to mark the grade locations and do not have additional protection devices to warn the motorist of an approaching train.

Railroad crossing signals should not be trusted entirely because they can malfunction.

The first train on a multitrack railroad crossing may screen another train coming from the opposite direction and its sound may drown out the noise of the other train.

Killing or stalling the engine can be especially hazardous when crossing railroad tracks.

Accelerating smoothly will reduce the chances of stalling the engine when crossing the railroad tracks.

Shifting gears is especially dangerous when crossing railroad tracks because shifting gears increases the danger of stalling.

The car engine should be thoroughly warmed up before attempting to cross railroad tracks.

PURPOSE: To enable the student to enter, drive through or across, and leave a tunnel or bridge safely and expeditiously.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching		When approaching a narrow bridge or tunnel, the student will slow down for better control and remain to the right to provide clearance with traffic in the adjacent lane.	When approaching and after entering a bridge or tunnel, the student will look for any signals indicating emergency situations ahead and for signs regarding the following: ● Lane availability and usage. ● Speed limit and passing restrictions. ● Use or nonuse of lights in a tunnel.	The student will remove sunglasses before entering a tunnel.	
After Entering		After entering a bridge or tunnel, the student will stop only if the traffic flow requires or if an emergency exists.	The student will observe other traffic and lane side structures after entering a bridge or tunnel. When driving through a tunnel, he will adjust speed to grade changes and observe the speedometer frequently in an effort to drive at a safe speed.		
Leaving				When leaving a bridge or tunnel, the student will observe posted signs regarding exit information and speed limit ahead. He will turn off lights upon leaving a tunnel during daylight hours.	

KNOWLEDGES

The student must be aware of the appropriate procedures, restrictions, and regulations in order to drive safely through a tunnel or across a bridge. The potential for an accident on either of these structures is greatest when speed is erratic and when the vehicle is stopped.

Stopping, standing, or parking is prohibited on bridges or other elevated structures on the highway as well as in tunnels or viaducts.

When traveling through a tunnel, drivers are frequently unaware that they have reached an upgrade and therefore tend to lose speed.

SKILLS

The student must be able to maintain directional control without impeding traffic while crossing a bridge or driving through a tunnel.

Frequently, bridges may be narrower than the roadway and tunnels may appear to be narrower because of the lighting and wall structure. Driving across a bridge or through a tunnel requires somewhat greater mastery of basic control skills than is required for driving in less confined areas.

PURPOSE: To enable the student to negotiate toll plazas in a safe and expeditious manner.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Approaching the Toll Plaza		When approaching a toll plaza, the student will note posted speed limit signs and will adjust speed accordingly. He will watch for erratic driving from other drivers whose attention may be diverted while fumbling for money.	When approaching a toll plaza, the student will observe traffic and lights in selecting a lane. In so doing he will: ● Observe which toll booths are open by looking for green lights on the top of the booths. ● Be prepared for a merging or diverging lane. ● Be ready to move either right or left to avoid crowded lanes. ● Avoid crossing more than one lane.	When approaching a toll plaza, the student will ready toll card and money; if exact change is available he will select an exact change lane.	When approaching a toll plaza, the student will ask a passenger, if present, to get the money and toll card ready.
At Toll Booth				The student will slow down gently and come to a complete stop parallel to the toll booth and next to the coin basket. When stopped at an exact change booth, he will toss all the coins into the basket and will proceed only after the green signal appears or the gate lifts.	The student will exchange the toll card and/or money with the attendant at the toll plaza. If he misses the basket when tossing coins at an exact change booth he will: ● Add additional change if available, but remain in the car. ● Call the attendant by sounding the horn if he hasn't any more change. When stopped at the toll booth, he may ask the attendant for a road map, directions, or about conditions ahead.

Leaving the Toll Plaza			When leaving the toll plaza, the student will: ● Observe signs indicating directions and speed limit. ● Get ready to merge with the traffic. ● Observe other drivers who are accelerating rapidly and cutting in to get ahead of other traffic.	The student will accelerate smoothly when leaving the toll plaza. He may pull over to a temporary parking area to study the map for the next leg of the trip.	

KNOWLEDGES

The student must know the procedures for approaching the toll plaza and toll booth, paying the toll, and leaving the plaza safely, and the reasons for following these procedures.

If correct change is available, an exact-change lane should be selected.

Exact-change lanes are generally faster since they are not occupied by drivers requiring change or requesting directions.

Leaving the car at a toll booth is hazardous and in many cases illegal.

It is generally worth a small additional cost to avoid the delay in summoning an attendant to recover coins which missed the toll basket. Automatic change machines will accept more than the required toll provided denominations are correct.

PURPOSE: To enable the student to drive safely during weather conditions that limit visibility.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Limited Visibility Conditions in General		During conditions of limited visibility, such as rain, sleet, snow, hail, fog, sun glare, or a sand storm, the student will: ● Maintain a speed slower than would be appropriate under clear visibility conditions. ● Maintain a longer following time or distance behind the vehicle ahead than would be necessary under clear conditions. ● Drive in a lane that permits greater separation from oncoming traffic. ● Watch vehicular and pedestrian traffic more closely, particularly during precipitation when the visibility of pedestrians may be obscured by umbrellas or rain gear.			
Fog or Intense Precipitation	When visibility is reduced by fog or intense precipitation during the day or night, the student will adjust the speed to permit stopping the car, if necessary, within the distance that is clearly seen, that is, he will not overdrive his visibility.	When fog or intense precipitation reduce visibility, the student will look to the front and to the side for cues. Vehicles' lights and pavement markings, particularly those on the right side serve as cues to aid him in steering the car along the roadway and positioning the car within the lane.	The student will turn on the low-beam headlights when visibility is obscured by fog or intense precipitation. He will stop at the roadside to wait for a severe downpour to subside.		
Sun Glare		When glare from the sun is blinding, the student will lower and adjust the sun visor to shield his eyes without obstructing his view.	When glare from the sun is blinding, the student will look down at the roadway in front of the car to avoid looking directly into the sun.		
Sandstorm		When in a sandstorm, the student will: ● Grasp the steering wheel firmly to be prepared to make steering corrections quickly and with full control. ● Proceed slowly if visibility permits.			

		• Watch for lane markings partially obscured by drifting sand. • If the visibility worsens, stop at the roadside until the storm subsides.			
Maintaining Clear Windshield and Windows			When the view through the windshield is obscured by precipitation or road spray, the student will: • Turn on the windshield wipers and adjust the wiper speed so it is fast enough to keep the windshield as clear as possible. • Use the windshield washers to free the windshield of dirt when precipitation is light. He will turn on the defroster: • To melt ice and frost from the windshield when the wiper action alone can not clear the windshield. When the view through the windshield is obscured by condensation from the occupants' breath or during humid or cold weather, he will wipe condensation from the side window(s) with a cloth. When the side window is covered with dew or mist, he will roll the window down and up to wipe off the moisture.	The student will turn on the windshield wipers to clear the surface of precipitation or road spray only after there is sufficient water to wipe without smearing the windshield. Even with antifreeze in the solution, he will not use the windshield washers during extremely cold weather. After turning on the defroster to clear the condensation from the windshield he will: • Turn off the heater air flow to permit a concentration of warm air through the air ducts, which expedites clearing the windshield. • Open the vent window to permit the entry of additional outside air, which will help reduce the humidity level inside the car and the temperature difference between the outer and inner windshield. • If necessary, remove heavy condensation with a cloth.	

KNOWLEDGES

The student must know the adjustments in his driving that are required to accommodate the weather that limits visibility and the compensatory procedures for attaining the best possible visibility.

Driving in the lane that permits greater separation from oncoming vehicles is advisable because reduced visibility increases the chances of an oncoming vehicle driver being confused and entering an opposing traffic lane. This is particularly true at night when water accumulated on pavement dissipates the light and obscures lane markings.

In addition to restricting visibility and affecting roadway surfaces, rain also increases the noise level inside the car (e.g., drumming of rain on car body, sound of windshield wipers, splashing of tires through water) which may prevent the driver from hearing other vehicles.

Rain is more frequently associated with traffic fatalities and injuries than any other weather condition.

A large percentage of injuries and traffic fatalities occur on wet pavements.

Vacuum-type wipers that have slowed down will return to normal speed if the foot is lifted briefly from the accelerator.

By drawing in the relatively dryer air from outside, the defroster clears away condensation from the inside glass surfaces and keeps additional condensation from forming. Adjusting the temperature setting to counter the outside temperature will expedite the process, as would increasing speed of the defroster fan. An open window also helps create a cross draft, allowing more outside air to enter the car.

If the defroster is inoperative during freezing rain or snow, the windshield may be cleared by applying glycerine or alcohol on the outside of the windshield to keep it from icing.

Even if the washing solution contains antifreeze, windshield washers should not be used during extreme cold because the spray might freeze on the windshield and obstruct the view.

During fog or intense precipitation, cars with low-beam headlights can be seen at much greater distances than can those without lights or with parking lights.

Parking lights are inadequate.

Sidelights are virtually useless in fog because they often become visible only after the car is outlined.

Fog lights should be positioned low to be effective.

The color of fog lights makes no difference in effectiveness.

Fog or intense precipitation was cited as a contributing factor in 46 of 1,000 accident reports recently reviewed.

Fog, mist, haze, and smoke seem to cause fewer personal injury accidents. However, fog is the leading cause of multiple car accidents.

The student should know the relationship of glare to tracking accuracy, target detection, fixating, and age. Drivers in accidents have complained that glare had limited their visibility at the time of the accident. Wearing sunglasses will reduce the effects of glare.

Blowing sand could damage the car if filtered into the parts.

SKILLS

The student should be able to automatically select the most effective procedure or combination of procedures for improving his visibility quickly. He should also be able to locate and operate the accessories by touch or with no more than a glance.

PURPOSE: To enable the student to drive safely and comfortably during extremely hot or extremely cold weather.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Hot Weather				During extremely hot weather, the student will: ● Monitor the temperature gauge for signs of overheating. ● Maintain circulation in the cooling system by: ● ● Shifting to a lower grear when moving slowly in heavy traffic. ● ● Shifting to the neutral position and depressing the accelerator slightly to race the engine when standing in heavy traffic.	
Cold Weather		During a rapid temperature change to below freezing after a rainfall, the student will depress the brake pedal periodically, even though traffic conditions may not require braking, to test the functioning of the brakes.	When the temperature drops rapidly to below freezing after a rainfall, the student will watch for ice patches on the roadway. When the temperature is extremely cold, the student will open the window(s) slightly and/or turn on the defroster to avoid or eliminate condensation on the windshield.	During extremely cold weather, the student will: ● Monitor the temperature gauge for signs of overheating. ● Shift to the park position and leave the parking brake off when parking a car with automatic transmission.	During extremely cold weather the student will have the fuel tank filled more often to reduce the chance of ice forming and blocking the fuel line.

KNOWLEDGES

The student must know how the car could be affected by extreme temperatures and the procedures for avoiding or overcoming the effects.

During hot weather:

When the air conditioner is turned on for the first time during the day, the window should be open and the fan turned on to clear out stale air.

Prolonged high-speed driving should be avoided during extreme heat because the high speed causes excessive tire wear, increases the chance of a blowout, and heightens the danger of the engine overheating.

Racing the engine in neutral while standing in heavy traffic makes the fan turn faster and cools the engine temperature more quickly. Racing the engine slightly also helps to keep the car from stalling.

After a long drive during very hot weather, the engine should idle a few minutes before the ignition is turned off. This practice helps to prevent vapor lock, which could prevent the car from starting again.

When the temperature decreases rapidly, the brakes should be tested periodically because moisture that collects on the brake linings may freeze and cause reduced braking power.

During cold weather:

Turning on the heater should be delayed until the temperature gauge indicates the engine has warmed. Otherwise, the air from the heater will be cold.

Keeping the fuel tank nearly full will reduce the amount of moisture formed by air condensing in the fuel tank. The water could freeze and block the fuel lines.

The parking brake of an automatic transmission car should be left off during extreme cold because the brake linings may freeze to the brake drum, making it very difficult or nearly impossible to disengage the brakes.

Opening a window slightly will create a cross draft, allowing warm air to pass through the heater without operation of the blower.

PURPOSE: To enable the student to maintain directional control during a high crosswind.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Crosswind		When driving with a high, steady, or intermittent crosswind, the student will maintain a lower-than-normal speed. When the vehicle has been moved from its intended path by a gust, the student will turn the steering wheel enough to attain the car's original path without oversteering.	When driving with a high crosswind, the student will: ● Grasp the steering wheel firmly to steer toward the wind when the car's lateral positioning is altered by the wind force. ● Anticipate the need for steering corrections when the wind is screened by hills, buildings, or larger vehicles.	The student will close the windows to prevent flying dust from entering the car and to reduce the noise from the wind.	

KNOWLEDGES

The student must know the procedures to be used when driving in a crosswind.

Wind force will alter the lateral position of the moving car. Continuing on a straight line course without steering corrections will cause the car to cross into the adjacent lane or steer off the roadway.

The slower the speed at which the driver is travelling, the more time will be available to perceive, react to, and correct lateral movements caused by crosswinds.

Even moderate crosswinds can disturb the car's operation if (a) its handling characteristics, (b) the driver's condition, or (c) the road surface, are poor.

Worn shock absorbers or suspension linkages, worn, underinflated or overinflated tires, or uneven weight distribution can increase the car's vulnerability to wind force.

Fatigue, inattentiveness, and other conditions that affect driver's performance will impair the quality and speed of response to crosswinds.

Slippery pavement, surface irregularities, and superelevation increase the vulnerability of the car to wind force.

Gusts produce rapid changes in the car's lateral positioning. High corrective steering rates are required to hold the car in its lane. Such frequent steering and countersteering increase the chances of overcompensation or oversteering.

An excessive steering correction may cause a violent lateral motion when the wind is suddenly removed.

High wind can cause the car to deviate from path and this action can be erratic through canyons.

SKILLS

The student must have mastered basic steering skills sufficiently to be able to correct rapidly, turning the wheel just enough to regain the desired path, without overcorrecting.

PURPOSE: To enable the student to drive safely during darkness.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General Night Driving	Between dusk and dawn, on extremely dark days, and at night the student will: ● Drive with the headlights on. ● Maintain a speed that permits stopping within the distance illuminated by the headlights.	The student will drive more slowly during darkness than under similar circumstances during daylight. The student will be more cautious when performing maneuvers at night than during daylight. For example, he will: ● Maintain a longer separation between the car and the vehicle ahead. ● Allow a greater passing distance than would be acceptable during daylight. To avoid becoming tired and to maintain good eyesight, he will make sure the car is well ventilated.	As a general rule, the student will position the headlights on low beam in all but rural areas. To avoid becoming tired and to maintain good eyesight when driving for a long period, the student will stop frequently to rest. At dusk, he will take off his sunglasses or replace tinted eyeglasses with clear ones.	The student will refrain from using matches or bright lights, such as the dome and map-reading lights.	
Before Driving at Night		Before driving at night, the student will look to see that the taillights, stoplights, and directional signals are working.	Before driving at night, the student will turn on the headlights. Before driving at night the student will place the headlights in the appropriate beam position. If necessary, the student will adjust the panel light to a lower intensity for better visibility of the roadway while still bright enough to read the critical instruments. Observe whether the headlights are on when leaving a parking space, particularly in a brightly lighted area where unlighted headlights may not be immediately noticeable.	When starting out at night, the student will flick the beams up and down to verify the lights are working.	

			Make sure the parking lights are not used for driving.		
Urban Driving		In urban areas, the student will: ● Use the low beam headlights to avoid blinding other drivers and pedestrians. ● Watch for pedestrians and unlit vehicles and objects on the roadway and at curbside. ● In the absence of posted speed regulations in dimly lit areas, drive no faster than: ● ● 30 miles per hour on dry pavement. ● ● 25 miles per hour on wet pavement.			
Rural Driving		When approaching an oncoming vehicle on a rural road, the student will: ● Depress the dimmer switch to change from high to low beams. ● Take the following actions if the driver of the oncoming vehicle refuses to dim his headlights: ● ● Slow down. ● ● Keep the car's headlights on low beam. ● ● Focus his eyes on the right side of the roadway beyond the oncoming vehicle to avoid looking directly at the bright lights. ● ● Close one eye as the vehicle draws near, and keep it closed until the vehicle passes, to preserve that eye's night vision. ● ● Maintain a slower speed for a while after the vehicle has passed.	On rural roads, the student will place the headlights on high beam except: ● When approaching an oncoming vehicle. ● When overtaking or following a vehicle at a distance of 500 feet or less.		
		He will watch the taillights of the vehicle ahead to detect changes in the distance between the car and vehicle.			
		If the driver of the vehicle following the car does not dim his headlights, the student will: ● Slow down gradually. ● Position the car well to the right of the roadway.	When being followed by a vehicle with bright lights, the student will switch the day/night rearview mirror to the night position if it has not already been placed in that position.		

(Continued)

PURPOSE: To enable the student to drive safely during darkness *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Rural Driving *(Continued)*		● Avoid looking directly at the rear-view mirror(s). ● Allow the vehicle to pass at the first safe chance. When approaching a pedestrian or an animal on a rural road, he will: ● Switch the headlights to low beams. ● Slow down. ● Observe the pedestrian or animal for any signs of a change in the direction of movement. ● Prepare to take evasive action, such as stopping or swerving, should the pedestrian or animal enter the roadway.	When approaching an animal refuge or crossing area, the student will: ● Slow down upon observing the road sign. ● Watch for animals on or alongside the roadway.		
Parking on Shoulder			When parking on the shoulder, the student will: ● Position the car well to the right of the roadway. ● Turn on the four-way flasher units to warn other drivers of the parked car.		

KNOWLEDGES

The student must know the additional actions that are dictated by darkness and the modifications in normal maneuvers that are required as a result of reduced visibility.

The student must know the effect of darkness on visual acuity. He should know that peripheral and central vision become poorer as the amount of illumination decreases, but that peripheral vision is more efficient than central.

As a standard of performance, most states require that a driver be able to see an object 350 feet ahead with the high-beam headlights on.

Sunglasses must be removed at night because they decrease the limited amount of light reaching the eyes. However, wearing tinted sunglasses during the day, prior to driving at night, aids night vision because less time is required for dark adaptation. Once the eyes have become dark-adapted, it is important to preserve their adaptation because recovery from exposure to brighter light takes a long time. During the recovery period night vision is significantly impaired. Bright lights are to be avoided in the car because they reduce visibility by producing glare on the windshield and windows.

High altitude, smoking, and carbon monoxide adversely affect visual efficiency at night. Good ventilation will reduce the effects of smoke and carbon monoxide.

Highway lighting standards are based on the average vision of 20-year-old drivers. Since night vision deteriorates with age, there are many drivers on the road who cannot see very well. Drivers 50 to 70 years old require considerably more light to drive by than 20-year-olds. Drivers who are 40 and older are involved in about three times as many accidents resulting in injuries when driving on unlighted roads as they are when driving on lighted roads.

The student should know the range of the car's headlights.

Low beams in good condition are effective for about 150 feet. High beams in good condition are effective between 350 to 500 feet.

Maximum visibility for high beam headlights with no glare is 540 feet. This is equal to the stopping distance for new tires on wet roads at 60 miles per hour.

Assuming effective low beam headlight distance of 150 feet, and correcting for the decrease in seeing distance due to speed, clear sight distance is 90 feet at 30 miles per hour. The stopping distance at 30 miles per hour, assuming a three-fourths-second reaction time, is approximately 78 feet. This estimate does not include allowance for slightly farther visibility on wet roads, or consideration of the possible limiting effects of precipitation on visibility.

Use of parking lights for driving at dusk is illegal in some states because parking lights are too weak.

The student should know the relationship between speed and visibility.

To determine whether speed is appropriate to visibility, the driver may employ the following procedure: (a) estimate stopping time by dividing speed by 20 and adding 2 (e.g., 30 miles per hour = 30/20 = 1.5 plus 2 = 3.5 seconds); (b) count the seconds between the time the object becomes visible and the time the object is passed. If the estimated stopping time (a) is greater than (b), it will not be possible to stop in time to avoid an object or person even if the brakes are applied upon first sight. Therefore, speed is excessive.

Clear seeing distance decreases in the daytime about 20 feet for each increase of 10 miles per hour in speed. At night, these distances are further reduced. For example, at night the driver can see 80 feet farther at 20 miles per hour than he can at 60 miles per hour.

Conditions associated with rural roads, such as curves, hills and narrow roadways, essentially limit safe speeds to 50 to 60 miles per hour.

In a study comparing headlight visibility on wet and dry roadways, the driver's own headlights gave two to five meters shorter visibility on dry roads than on wet roads.

In another study with no opposing vehicle, the wet road gave five to ten meters more visibility. This is attributed to wet roads having less light diffusing quality. Less light from the car headlights is reflected back to driver's eyes and more light is reflected ahead toward object.

The student must know the impact of opposing headlights on the driver's night vision.

Visibility is affected considerably by opposing headlights at distances even in excess of 3000 feet.

High beams may blind the oncoming vehicle driver, compounding the problem of driving on a wet and possibly slippery surface.

Distance and speed estimation for oncoming vehicles at night is almost equal to that of daytime driving in the case of standard size vehicles. However, since distance perception at night is based upon angular separation of headlights, the distance of a small foreign or compact car may be overestimated.

Concentrating vision on the right side of the roadway beyond the oncoming vehicle offsets the blinding effect of headlight glare. Peripheral vision will keep the car driver cognizant of the oncoming vehicle.

Maximum visibility when both car and oncoming vehicle are using low beams is 200 feet.

Maximum glare trouble occurs at 100 to 150 feet.

(Continued)

At 100 feet away, it is very difficult to see objects beside or beyond the oncoming vehicle. Vision does not return to normal for some time after lights have been passed. The average pupil contracts in one second. When exposed to bright light, the pupil requires at least 7 seconds to readjust and even more time is required for the eye to become dark adapted again. Therefore the driver actually travels a distance when he is effectively blind after passing a pair of brilliant headlights, e.g., at 50 miles per hour, a total of 73 feet is traveled before recovery. In a study of 162 drivers involved in night accidents, 62% suffered noticeably from glare blindness.

The student must know the procedures for following and overtaking a vehicle.

Dimming the car's headlights when overtaking a vehicle will reduce the adverse effects of glare caused by the headlights shining in the other car's rearview mirror.

On the average, drivers are able to perceive closure with the vehicle ahead at between 1200 and 1500 feet.

The distance between the taillights and, to a lesser degree, the brightness of the taillights of the vehicle ahead are the cues the driver uses to determine his distance from that vehicle. The driver perceives he is closing with the vehicle ahead as the taillights appear farther apart and brighter.

Driving at twilight is more dangerous than driving during daylight. Drivers overestimate their ability to see at twilight. Shadows increase the difficulty in judging the speed and distance of other vehicles. Many drivers are also fatigued at dusk enroute home from work. One-fifth of motorists in fatal traffic accidents were fatally injured between the hours of 5 p.m. and 8 p.m.

SKILLS

The student must:

Be able to keep sight of an oncoming vehicle with his peripheral vision and to maintain his car on its path by focusing along the right edge of his lane until the oncoming vehicle has passed.

Develop the skills of judging distances, closing rates, and performances of all other normal daytime driving behaviors under conditions of altered, reduced, or distorted visual information.

Learn to overcome the stresses produced by the perceptual problems of night driving since these stresses can seriously alter his judgment, perception, and psychomotor ability.

PURPOSE: To enable the student to adjust his driving behavior to compensate for the effects of towing a trailer.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General—Starting and Driving		The driver will follow other vehicles at a greater than normal distance. In passing a slower vehicle, the driver will: ● Look ahead before passing to be sure there is adequate distance available to complete the pass. ● Look behind before passing to ensure there is sufficient space for gradually reentering the driving lane should it be necessary to abort the pass.	When driving on the roadway, the driver will: ● Observe the speed limitations for cars towing trailers. ● Keep to the right side of the roadway. Stop frequently to check the security of the trailer and the condition of the tires. In doing so, he will: ●● Check all hitches, safety chains, and connections to be sure they are secure. ●● Check the trailer stop lights and running lights to be sure they are operational and capable of being seen. ●● Check the inflation level and general condition of the trailer tires. If meeting an oncoming truck or bus the driver will: ● Steer along the extreme side of the roadway. ● Slow down to lessen the trailer's side movement that is caused by wind gusts. ● If the trailer starts to sway, the driver will apply the trailer brakes lightly to diminish the sway effects. ● He will allow an additional margin when passing to compensate for the slower speed and longer length of the car and trailer.	When starting forward, the driver will accelerate slowly and smoothly and increase the car's speed gradually. He will drive slower than he would under similar circumstances without the trailer.	

		• Look before passing to be sure that following traffic will not be hindered by the pass attempt. • Change lanes smoothly, rather than abruptly, when pulling out to pass and when cutting back in after passing. • Position the car sufficiently to the left of the vehicle being passed to compensate for the additional width of the trailer and the possibility of swaying. If being passed by another vehicle, he will provide a gap sufficiently large for the vehicle to enter and occupy safely.	He will move as far to the right of the roadway as is safely possible when being passed by another vehicle.		
Hills and Winding Roadways			When on a long or steep upgrade or a winding roadway, the driver will: • Drive in the far-right lane or the auxiliary lane for slow-moving traffic on multi-lane roads. • Keep as far right as possible on two- or three-lane roads. • If being followed by three or more vehicles: • • Look for a turnout on the roadway. • • Signal for a turn into the turnout area. • • Enter the turnout to allow the following traffic to pass, ensuring that the trailer is completely off the roadway. • • Resume travel on the roadway after the line of traffic has passed. When driving on long and/or steep downgrades, the driver will: • Shift to a lower gear range before beginning the descent. • Keep to the right as far as possible.		
Curves, Corners			When negotiating curves or corners, the driver will: • Slow down before entering the curve or corner and maintain a reduced speed throughout the maneuver. • Turn the steering wheel gradually to avoid sharp or abrupt turning movements. • Allow sufficient distance or room in turning to avoid jackknifing or running over the curb.		

(Continued)

PURPOSE: To enable the student to adjust his driving behavior to compensate for the effects of towing a trailer *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Curves, Corners *(Continued)*			● Allow additional room in turning to provide clearance from other vehicles, pedestrians, and objects located adjacent to the intended turning path. ● If going around a sharp left curve, position the car and trailer along the extreme right side of the roadway.		
Strong Winds			If excessively strong winds or gusts occur, the driver will leave the roadway at the nearest safe location and wait until the wind has subsided.	When driving in strong wind, the driver will slow down and keep to the extreme right of the roadway.	
Slowing, Stopping		When slowing or stopping, the driver will: ● Apply the brakes intermittently and gradually, and will avoid slamming on the brakes. ● If the trailer is equipped with brakes, apply the trailer brakes just prior to the car brakes.	When slowing or stopping, the driver will begin braking before he normally begins to stop. For a brief second just prior to applying the car brakes, he will apply the trailer brakes using a quick on-and-off motion. Before stopping off the roadway, he will ensure that the trailer is completely off the roadway.		
Backing		When backing the trailer, the driver will look to the rear to ensure that the roadway is clear of traffic and that sufficient clearance is available alongside the intended path of movement.	The driver will back the trailer slowly and gradually, exercising extreme caution.	When turning while backing the trailer, the driver will: ● Look to be sure there is adequate clearance along the intended path of the turn. ● Back the car in the direction opposite from the desired direction of the trailer movement, for example, back the car toward the left for the trailer to back toward the right. ● Turn the steering wheel gradually to avoid jackknifing the trailer.	

KNOWLEDGES

The student must know that towing a trailer requires some modifications in normal driving behavior, extra care to perform maneuvers gradually and smoothly, and the performance of behaviors peculiar to towing.

Towing a trailer alters the center of gravity in the car and affects its handling characteristics.

A trailer also adds more drag on the car.

The procedures for performing the usual driving tasks with trailer in tow—such as starting, negotiating hills and curves, interacting with traffic, driving in wind, stopping, and backing—are described in the performance section above.

Additional procedures related to the trailer, such as frequent checks of trailer security and tire condition, steps for eliminating sway, adherence to special speed limits, and pulling into a turn-out area to permit a line of following traffic to pass are also listed.

SKILLS

The student must be able to judge the effect of a trailer on his ability to accelerate and decelerate and upon the steering and braking characteristics of his car.

PURPOSE: To enable the student to adjust his driving behavior to compensate for the effects of hauling heavy loads within or on top of the car.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		When the car is heavily loaded, the driver will: ● Begin slowing down for a stop sooner than would be necessary when the car is lightly loaded. ● Allow a greater than normal separation between the car and the vehicle immediately ahead.	When having heavy loads, the driver will adjust for the effect of the load on the car's accelerative, braking, and steering capabilities. He will: ● Drive at slower than normal speeds. ● Perform maneuvers and movements gradually and avoid abrupt actions. ● Check the tire inflation pressure frequently to maintain at least the recommended pressure in each tire. He will not release pressure when the tires are hot in order to attain the pressure recommended for cold tires. ● Inspect the load periodically to ensure that it is properly restrained and has not shifted.		
Loads Within Car		When hauling loads within the trunk or rear passenger area, the driver will make sure he has clear visibility through the windshield, rear window, and all side windows at all times.	When the load is within the car, the driver will make sure the objects do not interfere with his access to the controls or hinder using them. He will stop periodically to check that: ● Objects extending through the back of the car are restrained properly. ● The warning device, such as a red flag, is secure.	If traveling at night and oncoming vehicles keep blinking their headlights when the car's headlights are on low beam, the driver will: ● Stop at the first safe opportunity to check the load in the rear passenger area and in the trunk. ● Redistribute the load more uniformly if necessary.	
Loads on Top of Car		When hauling loads on top of the car, the driver will check the load frequently to see that it is properly restrained and secure. When driving in a strong steady or gusty wind, the driver will: ● Reduce his speed. ● Prepare to effect steering corrections more quickly than when car is unloaded.	When driving in windy conditions with a load on top of the car, the student will stop more frequently to check the effect of the wind force on the restraining device and the security of the load.		

KNOWLEDGES

The student must know the effects of a load on the car's accelerative, braking and steering capabilities and the procedures for accommodating the load effects.

A loaded car requires more braking distance and more highly inflated tires.

Placing heavy loads within or on top of the car alters the center of gravity, with consequent changes in the car's handling characteristics.

Failure to adjust driving behavior to compensate for heavy loads has been cited as a cause of numerous accidents.

SKILLS

The student must be able to detect changes in the car's responsiveness and performance as the result of a load on top, and to respond quickly with compensatory adjustments in his driving.

PURPOSE: To enable the student to react safely when a car's malfunction endangers its occupants and other road users.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Accelerator Pedal Stuck		If the accelerator pedal is stuck in the down position, the driver will: ● Observe the available unobstructed or clear distance ahead. ● Not reach down to try to free the pedal and thereby divert his attention from the roadway, even when there is plenty of clear distance available.	If the accelerator pedal is stuck in the down position in heavy traffic, the driver will: ● Turn off the ignition. ● Brake gradually. ● Downshift if possible. ● Leave the roadway at the first safe opportunity. ● If the car is equipped with power steering and power brakes: ●● Shift into neutral or depress the clutch. ●● Apply the brakes. ●● Leave the roadway as soon as safely possible. ●● Stop the car. ●● Turn off the ignition immediately.	If the accelerator is stuck in the down position and the distance ahead is clear, the driver may attempt to pull the accelerator up with the toe of his shoe or have a passenger try to pull it up.	
Brake Failure	If the braking function is completely lost, the driver will: ● Pump the brake pedal in an effort to build up pressure. ● Apply the parking brake with his hand on the release lever. ● Shift to a lower gear. ● Steer onto the shoulder, over the curb or into a field if possible. ● If necessary, look for an object to sideswipe, such as brush, a snowbank, a guardrail or even a parked car. ● Sound the horn or activate the four-way flasher units to warn other drivers that the car is out of control.	If the brakes begin to fade on steep downgrades or after repeated stops from high speeds, the driver will: ● Leave the roadway as soon as it is safely possible. ● Stop the car off the roadway and wait awhile to let the brakes cool off. If the brakes fail when a quick stop is vital, he will leave the roadway, taking care to avoid a collision with fixed roadside objects such as signs, poles, or trees. If the brakes are unresponsive after driving through deep water, he will depress the brake pedal lightly with the left foot while accelerating in an effort to dry the brake linings and restore them to normal operation.	If power brakes fail, the driver will: ● Depress the brake pedal as far as it will go. ● Apply increasing force on the pedal to stop the car's motion.		

Headlight Failure			If the headlights fail while driving at night, the driver will: ● Slow down as quickly as possible. ● Steer to keep the car on its path. ● Look for objects that might aid in getting oriented. ● Turn on the parking lights or any auxiliary light switches to see if any lights are operational. ● Look for a place to leave the roadway. ● Steer well off the roadway and stop.	When the headlights fail at night, the driver will depress the dimmer switch to try to restore light on the alternate beam.	
Steering Failure		If the power steering fails due to the engine stalling, the driver will attempt to restart the engine. If conventional steering fails, the driver will stop the car as quickly as possible.	If the power steering fails, the driver will: ● Grasp the steering wheel firmly with both hands. ● Exert additional force to steer the car.		
Hood Opens		If the car hood flies open, the driver will: ● Apply the brakes smoothly to slow down the car. ● Look ahead under the opened hood or view the roadway through the left window. ● Steer the car onto the shoulder, stop, and secure the hood.			
Engine Stalls While Moving				If the engine stalls while moving on the roadway, the driver will: ● In a manual transmission car: ●● Shift to neutral and attempt to restart the car by performing the normal starting procedures, if the car is moving at a low speed (less than 20 miles per hour). ●● Keep the ignition on and downshift to second gear at speeds over 20 miles per hour, and let the clutch out slowly to restart the engine. ● In an automatic transmission car: ●● Shift from drive to neutral. ●● Restart the engine and shift back to drive.	

(Continued)

PURPOSE: To enable the student to react safely when car's malfunction endangers its occupants and other road users *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Engine Stalls While Moving *(Continued)*				●● Avoid shifting to the park position while the car is in motion. If efforts to restart a stalled engine fail, he will: ● Place the gearshift lever in the neutral position. ● Look for the first opportunity to drift off the roadway. ● Slow down, if necessary, but maintain sufficient momentum for the car to coast ahead and leave the roadway safely.	
Tire Blowout		If a tire blows out or goes flat suddenly, the driver will: ● Grasp the steering wheel promptly and firmly. ● Steer the car to maintain a straight course. ● Ease up, but maintain slight pressure on the accelerator pedal. ● Depress the brake pedal only after the car speed is reduced. ● Look for a safe level place to drive completely off the roadway.			
Fire		If there are indications that the car is on fire, the driver will: ● Not try to put the fire out while the car is in motion. ● Slow down as quickly as possible. ● Leave the roadway quickly and pull well off the roadway. ● Stop the car and turn off the ignition. ● Attempt to put out the fire.			

Loss of Oil Pressure				If the oil pressure gauge or light indicates a sudden loss of oil pressure, the driver will: ● Turn off the ignition. ● Shift to neutral. ● Steer the coasting car off the roadway at a safe place.	

KNOWLEDGES

The student must know the signs of malfunctions in order to prevent emergencies from occurring, and be able to respond quickly to emergencies that arise.

If the accelerator is stuck or the brakes fail slowing down the car is necessary but difficult. Downshifting will allow engine compression or "drag" to help slow the car down.

If the brakes fail a manual transmission car in motion may be shifted into low gear to slow the car. This can be done without stripping the gears by shifting into second gear and then into neutral. Once in neutral, the clutch pedal should be released and the accelerator depressed to race the engine. Racing the engine will speed up the gear revolutions and eliminate gear clash. While the engine is racing, the clutch should be pressed in, followed by a shift to low gear. This procedure is called double-clutching.

Power brakes will fail any time the car stalls. To engage the brake reserve when power brakes fail, considerably more pressure is required on the brake pedal than would be necessary if the power brake unit were functioning properly.

Dual brakes in newer cars have nearly eliminated the chance of a complete loss of the braking function. Partial loss of the braking function will alter the brake's response. Loss of the front brakes is quite serious and could cause the car to spin around when the brake pedal is depressed.

Assuming the driver can control the car, the loss of the front brakes appreciably increases the stopping distance.

A loss of the rear brakes will increase the stopping distance somewhat.

Attempts to restart a stalled engine in a moving automatic transmission car should be made with the gearshift lever in neutral only, never park. Placing the gearshift lever in park while the car is in motion will damage the transmission.

A blow-out or sudden flat tire forcefully alters the car's direction. It is imperative, therefore, for the student's initial effort to be directed toward maintaining a straight course through firm steering. Hard braking, if done first, could lock the wheels and cause the loss of steering control.

A sudden loss of oil pressure necessitates stopping the car immediately, with no further attempts made to drive it. Without oil to reduce the friction between the moving parts of the car, irreparable damage could be done if the car is driven.

SKILLS

The student must:

Learn "double clutching," which requires precise coordination of clutch and accelerator.

Be able to react quickly to a blow out, avoiding the "natural" tendency to apply the brakes and maintaining a firm grip on the steering wheel.

Over-learn the procedures to the point where he recalls the appropriate responses easily at any time.

PURPOSE: To enable the student to respond appropriately to malfunction indications although the apparent malfunction may be unlikely to affect the safety of the driver or other road users.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Temperature Light			If the temperature light or gauge indicates the engine is overheated while driving, the driver will ● Leave the roadway as soon as safely possible. ● Attempt to remedy the overheating problem.		
Generator Light				If the generator warning light comes on or the gauge indicates discharge when driving at normal speeds, the driver will: ● Turn off nonessential electrical equipment, such as the radio and heater. ● Drive to the nearest service facility for immediate mechanical attention. ● If the engine is overheating at the same time, leave the roadway as soon as safely possible and park the car to look for the cause of the problem.	
Loss of Air Pressure			If there are indications of a tire going flat the driver will locate a safe level place off the roadway and stop the car.		
Lack of Fuel				If the car begins to hesitate or run roughly because of lack of fuel, the driver will leave the roadway at the first safe opportunity before the car stalls.	

KNOWLEDGES

The student must be able to recognize and respond appropriately to noncritical malfunctions.

Clear cues of malfunctions are frequently evident before a breakdown from observation of the display panel gauges or the driver's senses.

The driver who frequently checks the gauges or warning lights will readily detect signs of overheating, battery discharge, or low fuel.

He can feel a tire going flat in time to leave the roadway at a place suitable for tire changing. He must know the procedures for leaving the roadway, for remedying the problem, if possible, or be aware that he should cautiously proceed to the nearest service facility.

PURPOSE: To enable the student to deal safely with breakdowns that disable the car while on the road.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Leaving Roadway		If a malfunction occurs when driving in the left lane(s) of a multilane highway, the driver will pull onto the median if traffic prohibits moving to the right.	When a malfunction necessitates leaving the roadway, the driver will: ● Drive off the roadway at the first safe opportunity. ● Allow the car to coast off the roadway if the engine is inoperative.		
Parking Car		If possible, the driver will get out of the parked disabled car on the side opposite to the traffic flow.	When parking a disabled car immediately adjacent to the roadway, the driver will: ● Position the car well off the traveled portion of the roadway. ● Move as far off the roadway as possible when in fog. ● Turn on the four-way flasher.		
Car Stopped on Roadway			When the disabled car is stopped on the roadway, the driver will: ● Turn on the four-way flasher. ● Turn on the directional signal on the roadway side of the car if the car is not equipped with a four-way flasher. ● If on an incline, attempt to coast the car off the roadway by shifting to neutral and also depressing the clutch in a car equipped with a manual transmission.	If a manual transmission car is stopped on the roadway and needs to be moved a few feet, the driver will: ● Shift to low or reverse gear. ● Release the clutch pedal. ● Press the starter switch to move the car.	
Car Cannot be Moved From Roadway		When the car cannot be moved off the roadway, the driver will activate the four-way flasher unit.	When the disabled car cannot be moved off the roadway, the driver will provide advance warning to rear-approaching vehicles. In doing so, he will: ● Place emergency flares at least 100 feet behind the car in the lane and along adjacent lanes. ● If flares are not available, position himself or passengers to give advance warning of distress.		

KNOWLEDGES

The student must know the procedures for parking a disabled car off the roadway, for moving a car that has stopped on the roadway off the roadway, and for handling the situation when the car cannot be moved off the roadway.

The student should know the standard distress signals so that a police vehicle or motorist will stop to give assistance.

Ample warning must be given to rear-approaching traffic whether the car is on or off the roadway.

Emergency flares or warning devices should be placed an ample distance behind the car to alert rear-approaching traffic of the car's presence. At night, 200 to 300 yards is appropriate.

A white cloth tied to the left door handle or the radio antenna and a raised hood and trunk lid are signals that assistance is needed.

A vehicle parked alongside the roadway in fog is particularly dangerous. If it is not lighted, it may be struck by another vehicle pulling off the roadway; if it is lighted, it may mislead a vehicle as to the location of the roadway.

If another vehicle is immediately behind the car that has stopped on the roadway, the other driver should be asked to help push the car off the roadway with his vehicle.

With the help of passengers, a car may be pushed off the roadway if visibility and traffic conditions are favorable. Everyone should push from the side away from the roadway.

In a manual transmission car, pressing the starter will turn the engine and move the car simultaneously if it is in low or reverse. The procedure is hard on the starter motor and will drain the battery, but it is a way to move the car a few feet in an emergency.

When the car cannot be moved from the roadway, the correct procedure is to wait for assistance, not to leave the car to search for help. Waiting outside the car and off the roadway is safer than sitting inside the car, even with the warning devices in place.

PURPOSE: To educate the student to remedy various on-road emergency malfunctions.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Malfunctioning Headlights		If the headlights do not come on after the fuses have been replaced, the driver will wait for assistance and not try to drive the car.			
Changing a Tire		When a tire must be changed, the driver will position the car well off the roadway in a safe and level place and either change the tire himself or seek help from the nearest service station.	Before changing a tire, the driver will position the gearshift lever in park (automatic transmission) or reverse (manual transmission).	Before changing a tire, the driver will secure the car so it will remain stationary by applying the parking brake.	
Overheated Engine				After waiting for the overheated engine to completely cool (with the hood raised), the driver will: ● Using a heavy cloth, turn the radiator cap slowly, just enough to allow the steam to escape. ● Remove the radiator cap after the steam has escaped and look at the coolant level in the radiator. ● Add antifreeze or water if necessary and available. ● Replace the radiator cap securely and close the hood. ● Start the engine and observe the temperature gauge for indications of the temperature returning to normal. If a coolant is unavailable, or adding the coolant does not lower the engine temperature, the driver may seek assistance or drive slowly to the nearest service station, stopping off the roadway as necessary to keep the engine from excessively overheating.	
Seeking Assistance				When the disabled car cannot be readily serviced by the driver, he will seek assistance. He will: ● Leave the four-way flasher unit on.	

- Raise the car hood and tie a white cloth to the roadside door handle or radio antenna.
- Carry a lighted flashlight or flare if walking along the roadway at night.
- If alone on a freeway, remain with the car and wait for the police to arrive.

KNOWLEDGES

The student must know how to correct on-road malfunctions that can be readily accomplished with a minimum of basic tools.

The student should know how to extinguish a fire. Most car fires are caused by a short circuit in the electrical system.

The student should know where fuses are located in the car and how to replace them. Spare fuses should be carried in the glove compartment.

The student should know that water or slush could cause the engine to fail and not restart. He should know how to check parts of the ignition system for moisture and condensation.

An excessively overheated engine requires an inspection of the condition of the cooling system parts for loose connections, wear, and leakage. If the radiator, hoses, and fan belt are in sound condition, the procedure is to wait for the engine to cool, with the hood up. Radiator caps must be removed with care even when the engine is cool because the coolant in the radiator may be under considerable pressure. Steam and hot water may spew from the radiator opening and scald the driver if the cap is removed without first releasing the pressure.

PURPOSE: To educate the student in the methods, procedures, and hazards involved when being pushed or pushing another vehicle. (There are no performance objectives for this unit.)

KNOWLEDGES

The student should know whether one vehicle may legally push or tow another vehivle, and be aware of the problems associated with pushing and towing.

The bumpers of a pushing vehicle and the vehicle being pushed must match in contour and height.

When bumpers are not perfectly matched, attempts to push will result in the bumpers locking or physical damage to unprotected portions of either or both cars.

Pushing should not be attempted when the two vehicles are on different levels of the road surface.

Cars should not be pushed around corners. They should coast around corners and stop before pushing is again attempted.

Four-way flashing units should be used when pushing and being pushed.

Traffic must be watched and traffic signals obeyed during pushing operations.

If the pushed car does not start within one-half mile, the pushing effort should be discontinued because of possible damage to the transmission.

The driver of the car being pushed should:

When a manual transmission car is to be pushed to start the engine:

Turn on the ignition.

Depress the clutch pedal and release the brakes.

Shift to high gear. However, it is sometimes easier to start the engine in second gear.

When the car speed reaches 15 to 20 miles per hour, signal the driver behind to drop back and let up on the clutch pedal fairly slowly.

If traffic conditions or available distance necessitates trying to start at very low speeds:

Signal the driver of the pushing vehicle to drop back before letting up the clutch.

Bring the clutch up quickly to start the engine.

Depressing the clutch quickly to disconnect the engine before the slow speed is reached can kill the engine again.

When an automatic transmission car is to be pushed:

Turn on the ignition.

Put the gearshift lever in neutral and leave the brakes off.

When car reaches the required speed of 30 to 35 miles per hour, signal the driver of the vehicle behind to drop back.

Move the gearshift lever to the drive position to start the engine. The forward movement of the car will turn the engine, which enables the engine to start.

Pushing is a dangerous activity, especially with a pushed automatic transmission car which necessitates the pushing vehicle to travel at a speed that is hazardous for the visibility available. The pushed car, if equipped with power steering or power brakes, has no power for either.

The driver pushing another vehicle should:

When the car is pushing a manual transmission vehicle:

Move the car up slowly until the bumpers just touch.

Begin to push gradually.

Accelerate the car to 15 to 20 miles per hour if the vehicle is to be started at a higher speed, or accelerate to a lower speed if the driver of the vehicle being pushed is going to try low-speed starting.

Look for a signal from the vehicle driver and drop back to avoid touching the vehicle when the driver lets up the clutch. When the clutch is released, the vehicle will nose down slightly, which causes the rear end to rise. This position could result in locked bumpers or an override if the bumpers are touching at that moment.

When the car is pushing an automatic transmission vehicle, it is possible to use the same procedures as for pushing a manual transmission car, with the exception of speed. The necessary speed for automatic transmission cars is 30 to 35 miles per hour.

The car should be towed when longer distances are involved or when the car cannot be driven.

Only a tow truck should be used for towing the car, not another passenger vehicle.

The car should not be towed to start the engine because the car will leap forward when it starts and strike the vehicle towing it.

Automatic transmission cars should not be towed more than 12 miles unless special mechanical precautions are taken to avoid damage to the rear wheels, drive shaft, and transmission. Automatic transmission cars should be towed with the rear wheels elevated.

SKILLS

The driver who is pushing a vehicle with his car must be able to exercise precise enough speed control to maintain bumper-to-bumper contact.

PURPOSE: To educate the student in the planning and preparation which precede driving and in navigational activities.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Adverse Conditions			The driver will allow for extra time when travelling under adverse conditions.		
Long Trips				When preparing for a long trip the driver will make sure that the car is in good condition, paying particular attention to parts more likely to fail under heavy loads such as hoses, belts, tires, and the cooling system.	
Looking for Junctions		The driver will scan the roadside for signs that show junctions ahead.	The driver should look for the approach to key junctions when a route changes direction or when a different route is to be followed. He will watch for signs that provide directions or limitations or other information as the car gets close to a junction.		

KNOWLEDGES

The student must know how to plan for trips, and how to use highway information to safely and efficiently travel to his destination. Trip planning entails equipping the car for emergencies, ensuring that the car and driver are in sound condition, charting the best route to unfamiliar destinations, and determining the best time to travel, among other things. Knowledge of what to expect and preparing for the worst can help the driver and his passengers to contend with adverse seasonal conditions, accidents, and car breakdowns. Clear demarcation of the route to the destination can reduce frustrations, distractions, effects of hazards, and the time required for the trip.

To be prepared for emergencies:

The following items should be carried in the car at all times:

- Jack
- Lug wrench
- Wheel blocks
- Flashlight
- First-aid kit
- Flares
- Tool kit (screwdriver and wrench, at minimum)
- Jumper cables
- Fire extinguisher
- Spare fuses
- Spare flashlight batteries and bulb
- Towel, rags, or paper towels
- Pencil and notebook

The following items should be added for winter driving in northern regions:

- Scraper
- Snow chains
- Shovel
- Can of deicing spray
- Bag of cinders or sand
- Blanket, burlap bags, or carpet piece

A jug of water, extra motor oil, and permanent antifreeze, a tire gauge and a spare fan belt should be carried on long trips, especially when the route might pass through areas that are miles from a town or even a house where help could be sought.

When preparing for a long trip over unfamiliar territory, the student should know where to obtain up-to-date maps, how to read maps, and the criteria for selecting the safest, most convenient, and most economical route. The driver who has selected his route after studying maps and has become familiar with the route's characteristics as represented on the map should have minimal navigational difficulties. He will have an idea of the nature of the roadway ahead and be somewhat prepared for key events, such as entering or meeting junctions.

Automobile clubs, service stations, chambers of commerce, highway departments, and insurance companies are good sources of maps that reflect the latest roadway situation.

Familiarization with the legend is required for accurate interpretation of the symbols and markings on the map. The compass card and mileage scale provide the directional orientation and perspective of the area represented on the map.

Both large area maps and more detailed regional or state maps are useful in trip planning. Strip maps contain only the route and are useful for navigating, particularly when a driver is alone.

A map covering both the departure point and the destination provides an overall view of the distance to be traveled and a gross idea of the major routes and highway types available, for example, interstate, federal (U.S.) or state routes and highways that have controlled access, pavement, or are graded. The backs of large area maps, such as those of the entire country, frequently have charts or tables that provide total mileage and travel time between key points. Alternate routes should be marked on the map.

Regional and state maps cover smaller areas, but represent the routes in greater detail. The routes marked on the large map should be identified on these more detailed maps and studied to select the route that best meets the driver's needs. The selected route should be marked so that it is readily distinguishable from the original map lines. In selecting the route, factors to be considered are:

Route length. The mileage between towns and junctions is marked in black; mileage between key points is marked in red. Fine determination of the mileage for the alternate routes will usually entail the addition of some red and some black numbers.

Highway type (e.g., interstate, U.S., state, secondary). In contrast to the controlled access, multilane, straighter, steady, and high-speed newer roads that more and more interstate routes are using, secondary routes are likely to be on narrow, two-lane, winding, hilly, variable-speed, poorly surfaced roads that pass through many small towns.

The symbols of routes on maps usually are shaped like the route signs on the road. The sign shapes are distinct for the various types of highway and are readily recognizable.

Route signs have the route number on them. The numbers of interstate and U.S. routes indicate the direction of travel. Odd one- and two-digit numbers generally designate north-south routes, with the lowest numbered U.S. routes in the east and the lowest numbered interstate routes in the west. Even one- and two-digit numbers generally designate east-west routes, with the lowest numbered U.S. routes in the north and the lowest numbered interstate routes in the south. For interstate three-digit numbers, an odd first digit designates a route into the city, while an even first digit designates a route through or around the city.

(Continued)

Roadway classification (e.g., controlled access, divided, number of lanes, paved).

Current and seasonal weather conditions and their effects on the roadway surface.

Toll roads, bridges, and tunnels. On some toll roads, like turnpikes, the toll is collected at the exit interchange. The card given to the driver at the entrance to the road lists the cost from that interchange to each subsequent interchange. On other roads a fixed toll is collected periodically, as on the Garden State Parkway in New Jersey. On the back of some maps the estimated cost per mile is provided so the driver can gauge the total expense for using the roadway.

Locations of service stations, restaurants, hotels or motels, or campsites. This information, together with that on places of interest and scenery, can be obtained from the back of the map. The student should know also that interstate routes generally have no service stations, restaurants or hotels/motels on the road. Such accommodations are available near interchanges. Rest areas are provided along sections of the roadway, some of which have picnic areas.

Routes through, around, or into metropolitan areas. The backs of regional and state maps have small maps of selected cities in the area with these routes represented in detail.

Strip maps or route cards are of special benefit to drivers traveling alone because the driver can confirm his recollection of the route at a glance. Strip maps may be obtained from automobile clubs and entrance booths on most turnpikes. However, strip maps or route cards can be made easily and should include route type (interstate, U.S., or state), number or name, direction, and junctions.

Memorization of the entire route or a leg at a time reduces dependence on maps while driving. If available, a passenger should aid the driver by reading the maps, giving him directions, looking for critical junctions, and locating the final destination.

Selecting the right time of day to travel can determine the level of comfort and the length of time the trip will require.

Generally, 8 hours of driving (300 to 500 miles), with frequent rest stops, is considered enough driving for one day. However, getting sufficient rest before driving is more important to maintaining driver performance than restricting continuous driving. Fatigue from prolonged driving, as opposed to fatigue from lack of rest, appears to affect perceptual-motor skills negligibly.

A time cushion should be allowed for service and rest stops, possible bad weather, traffic congestion, detours, and other unexpected delays.

By starting and stopping early in the day, the driver probably will encounter less traffic, will find suitable lodging more easily (if not previously arranged), and will avoid night driving when navigation is more difficult.

The driver can save time and frustration by avoiding known bottlenecks, including cities, bridges, and tunnels at peak traffic hours. Week-end and holiday travel should be avoided too, if possible, because of the traffic jams and the higher risk of accidents. More people are killed during the first 12 hours than during any other 12-hour holiday period. The hours from 6:00 to 9:00 p.m. are the most dangerous. On holiday week-ends, traffic deaths are about 25% higher than on nonholiday week-ends.

To reach a destination in a strange city, the driver needs explicit directions from a reliable person or a city street map, preferably both. The student should know how to use the map efficiently.

The destination should be located in the index on the back of the map. The index lists local communities, streets, and public and private buildings. Churches, colleges, hospitals, libraries, parks, restaurants, and theaters are among the sites indexed. Each location is coded by letter(s) and number(s) that frame the map.

The letter and number of the destination represent a column and a row which intersect at a square on the map. The destination can be located within the square and should be marked.

The route from the departure point to the destination should be marked with attention given to the following factors:

Thoroughfares that divide the city north-south and east-west.

The number of streets the destination is from the driving thoroughfare.

The cross streets that border the destination.

The streets to be traveled and where turns should be made. The names of streets preceding required turns should also be noted, in order to position the car in the proper lane in advance.

The one-way streets and their direction of travel. Cities commonly make their streets one-way to expedite the flow of traffic. Adjacent parallel streets usually have traffic moving in opposite directions.

Through parallel side streets. They may be less congested and offer better travel time than the main thoroughfares.

When the roads are covered with ice or snow, the student should know how to plan his route along major roadways. They are the first to be sanded or cleared. Also, steep hills are to be avoided, and usually can be by using parallel streets that frequently are less steep. Taking a few minutes more to detour around the hill is preferable to taking the chance of being stuck on the hill.

SKILLS

The student must be able to calculate distances between points by using standard road maps and simple arithmetic, and estimate traveling times using simple algebra.

PURPOSE: To enable the student to load objects securely in the passenger area, trunk, and on the roof.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
General		When loading objects in the car the driver will place them and secure them if necessary to prevent them from shifting during normal or abrupt car movement.	When loading objects in the car the driver will place them so that they do not interfere with the driving. In so doing he will: ● Place objects so that his visibility through the windshield, rear window and side windows is not blocked or obscured. ● Position sharp or hazardous objects so that driver/passenger contact during abrupt maneuvers or impact is avoided. When loading objects on the roof or in the trunk he will attach a red cloth or red light to protruding objects depending upon whether it is daylight or night.	The driver will attempt to load objects in the trunk rather than the passenger area. When loading the car, he will place objects so that accessibility to the controls and ease of operation are not impaired. When carrying loads he will overinflate his tires somewhat, observing inflation pressure recommendations and load limitations.	
Loading Trunk			The driver will avoid placing excessively heavy loads in the trunk. If necessary to carry protruding objects in the trunk, he will: ● Make sure objects do not protrude to either side of the car. ● Avoid carrying objects which protrude an excessive length behind car. ● Ensure that the object does not interfere with the driver's visibility to the rear and with other drivers' visibility of car taillights, stop lights, back-up lights or turning lights. ● Ensure that the object adequately clears the pavement. ● Make sure that the object is securely restrained and that the trunk lid is securely fastened down.	When loading objects in the trunk the driver should position the objects so that excessive shifting will be avoided while the car is moving and so that the trunk can be tightly and securely closed. The driver should avoid carrying flammable items in the trunk; but when necessary to carry fuel in the trunk, he will fill the container partially and cap it tightly. He will use metal containers for carrying fuel and will place the container securely in the trunk away from sharp objects. When carrying oversized objects in the trunk which prevent the trunk from being closed, the driver will: ● Make sure that visibility to the rear is not obscured by the trunk lid. ● Secure the object in the trunk to keep it from falling out.	

				● Make sure that the trunk lid is securely fastened to the bumper of the trunk base to prevent the trunk lid from flapping or raising.	
Loading Passenger Area			The driver will not place objects on the dashboard or near window shelf.	The driver will avoid carrying long objects such as lumber or surfboards in the passenger area.	
Loading Roof				When loading objects on the roof the driver will: ● Avoid placing excessively heavy loads on top of the car. ● Inspect the restraining device to make sure it is not frayed or worn in spots. ● Check to see that all objects are secured tightly enough to restrict movement. ● Make sure that if a loading rack is used that it is fastened securely to the roof. ● Make certain that overhanging objects will not obscure vision by placing long objects, such as lumber, skis and surfboards, so that they extend rearward or forward. ● Aviod carrying objects which overhang past the sides of the car. ● Avoid carrying objects which protrude an excessive amount to the front or the rear of the car. Loads should not extend over 5 feet from the roof of the car.	

KNOWLEDGES

The student must know the different ways in which the objects can be loaded and the best means of loading them.

The load must be limited to the car's load-carrying capacity.

The objects should be positioned so that the distribution of weight in the car is uniform.

When placing objects in the trunk:

- Loads should not extend over 6 inches to the right side of the car or past the line of the fender on the left.
- A red cloth should be placed on the back of an overhanging load.

Extreme care must be exercised when objects are carried in the passenger area. A sudden stop may send the load side-to-side or forward in the car, endangering the front seat passengers or breaking the windshield.

PURPOSE: To enable the student to attach a trailer to the car and load the trailer properly.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Equipping Car and Trailer			The driver will make sure that the car and the trailer are properly equipped. In so doing he will: ● Make sure that the anticipated load dimensions and weight characteristics are within specified limitations. ● Install larger size extended rearview side mirrors on both sides of the car if the trailer is wider than the car. ● Install taillights, stop lights, or turn lights on the rear of the trailer if the rear car lights cannot be seen by other drivers because of the trailer width or height.	When hauling trailer loads, the driver will make sure that the performance and condition of the car are adequate for hauling the extra weight of the trailer and its contents.	
Hooking Trailer To Car			When hooking the trailer to the car the driver will position all trailer hitches in place and fasten them securely, making certain that the required safety chains are properly installed and securely fastened. When using a trailer he will securely fasten all brake and electrical connections and will check to see that the braking system and lights are working properly.	The driver will make sure that trailer tires are inflated equally at the proper pressure to prevent the trailer from swaying.	
Loading			The driver will distribute the weight of objects evenly when loading them into the trailer. He will restrain them as necessary to prevent them from shifting and bouncing out of the trailer. He will place objects in the trailer so that they do not hang over the sides of the trailer. If objects protrude from the rear of the trailer he will make sure that they do not obscure his vision, or another driver's view, of the car or trailer rear lights and signals.	If objects protrude from the rear of the trailer the driver will attach a red flag on the rear of the object(s) or will attach a red light at night. He will make sure that all gates or doors on the trailer are tightly closed or securely latched before driving.	

KNOWLEDGES

The student must know the procedure for attaching a trailer to the car and the best manner of loading objects into the trailer. In order to avoid sway while traveling, the trailer tires should all be inflated to the same pressure.

When using a trailer to haul loads, both the car and the trailer must be properly equipped. The car suspension system should be adequate for hauling the extra load, side rear-view mirrors should be used when the trailer is especially wide, and all lights should be operable and visible to the drivers who may be following.

SKILLS

The driver must be able to:

Judge the effect of the trailer and load upon the car's accelerative and braking response.

Judge the path the trailer will make in turning corners in order that both car and trailer remain within limits prescribed for turning.

Be able to associate turning motions of the car with those of the trailer in backing in order that both car and trailer remain on the desired path.

PURPOSE: To educate the student on the effects that drugs and alcohol have on driving safety and performance.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Alcohol	The driver will limit alcohol consumption before driving. If he drinks before driving, he will pace drinks to no more than one per hour.	When several alcoholic beverages are consumed in a short period of time, the driver will wait, before driving, one hour for each drink taken.			
Drugs	The driver will avoid driving after consumption of the following drugs: ● Analgesics, sedatives, hypnotics, stimulants, and amphetamines in large amounts. ● Antihistamines, sulfonamides, muscle relaxants, and antibiotics if they have previously caused drowsiness. ● Tranquilizers during initial stages following taking of the medication and before any obvious reactions have been noticed. ● Hallucinogens, marijuana. He will not drive after taking drugs if it is prohibited by state law.	The driver should obtain from a physician and/or literature the probable effects of drugs on driving performance.			
Both Alcohol and Drugs	The driver will not drive after taking both alcohol and a drug.				

KNOWLEDGES

The student must be thoroughly familiar with the effects of alcohol and drugs on his ability to drive safely and efficiently. Personal factors and social conditions often provide strong pressures that lead people to drive after having consumed alcohol, drugs, or both. Drinking and drug use reduce a person's ability to function mentally and in many cases diminish motor skill abilities used in driving. Knowing the possible effects of alcohol and various drugs on driver performance, as well as the penalties imposed when convicted of driving under the influence of either, will it is hoped, provide the student with the incentive to avoid driving after consuming alsohol or drugs.

Alcohol is absorbed into the bloodstream through the lining of the digestive tract, carried to all parts of the body including the brain, and eventually eliminated. As the alcohol concentration in the bloodstream increases, body functions are affected. How different people are affected varies. In addition, the same person may react differently at different times. For example:

> Use of alcohol retards the driver's reflexes. His reaction time may be increased by as much as four times the normal, if he has been drinking. Muscular coordination is also impaired. These effects are critical when stopping distances and the ability to maneuver and control the car are considered. Typically, the intoxicated driver begins slowing down too late, oversteers, weaves, and varies speeds indiscriminately.
>
> Alcohol has a detrimental effect on vision. Use of alcohol reduces visual efficiency in dim light, reduces the distance at which objects can be clearly seen, and decreases contrast sensitivity. Generally, there is a decreasing ability to detect pedestrian-size objects with increasing percentages of alcohol in the blood.
>
> Alcohol tends to make a driver feel he is more perceptive and skillful than he really is. Even a small amount of alcohol (12 ounces of beer or 1 ounce of whiskey) can affect driving. Since alcohol impairs judgment before other functions or skills, its influence is difficult for the driver to detect. The exhilaration it may produce compounds the effects of lessened driving efficiency.
>
> Use of alcohol affects the emotional and behavioral makeup by weakening a person's inhibitions and heightening existing moods such as anger or elation. Reduced inhibitions can be a factor in taking greater risks while driving. Preoccupation due to a highly emotional state of mind removes one's concentration from the driving task to other areas.

The optimum performance level for everyone occurs when alcohol is not present in the bloodstream. Most people who have consumed some alcohol exhibit a lessened ability to drive competently. Ideally, if a person drinks anything with alcoholic content he should not drive, but this is seldom put into practice. If a person realizes he is going to have a drink before driving he should take some measures to minimize the effects of the alcohol. The person can either wait for a period of time after having consumed the alcohol before driving or he can eat some foods or do both. By eating prior to or at the time of consuming alcohol the blood alcohol concentration can be reduced by as much as one-half. Foods with high carbohydrate content are considered the best to counteract the concentration of alcohol in the bloodstream.

Many highway accidents and fatalities can be linked to the use of alcohol. The student should be aware of this association. This relationship is exemplified by numerous statistics and accident report data.

> Alcohol consumption prior to driving, ranging in degree from the drivers' admissions of having had "a drink or two" to complete intoxication, was noted in 230 of 1,000 accident reports surveyed.
>
> Known alcoholic drivers had nearly twice as many accidents and violations as other drivers.
>
> A recent Alcohol and Safety Highway Report shows that only 1% to 4% of all drivers have blood alcohol concentration of .10% or more. Of the drivers who are fatally injured in all types of crashes, about one-half were found to have blood alcohol concentrations of .10% by weight.
>
> Drinking drivers and pedestrians are involved in 25,000 deaths per year.
>
> Between one-third and one-half of fatal accidents involve a drinking driver and more than one-half of the drivers in fatal Christmas holiday accidents had been drinking.
>
> The probability of being in an accident increases sharply as the amount of alcohol in the blood increases. Data from studies on driving and alcohol show that the effects of alcohol increase approximately as the square of the blood alcohol concentration. For example, .06% concentration is not twice, but four times as bad as .03%. Opinion among experts varies on the likelihood of a crash when the driver's blood alcohol content is below .05%. Evidence shows that the likelihood of a crash increases at around the .05% level and becomes progressively and disproportionately greater at higher concentrations. Increasing the blood alcohol concentration is dependent upon a person's weight. For a 150-pound person, the concentration is increased by approximately .02% with each drink.

Based upon research conducted to date, it appears that, while drug use may be responsible for some highway accidents, it is apparently not making as great a contribution to such incidents as alcohol. One explanation for this may be the relatively smaller proportion of drug users to alcohol users among drivers. The

(Continued)

incident rate may also be deflated as a result of the inability to test for hallucinogenic drugs and because certain drugs, such as amphetamines, are not easily detected through blood samples. Nevertheless, it is important that the student be aware of the known effects of various drugs and how they could affect his driving performance.

Narcotics are the most powerful and dangerous type of drugs. They produce drowsiness, inhibit concentration, impair vision, and tend to make the individual sluggish. Morphine, cocaine, and heroin are typical examples of narcotics and can be legally dispensed only when prescribed by a physician. One should not drive after taking any narcotic since concentrating on the driving task would be difficult and vision affected.

Marijuana, also known as "grass", "pot", and so forth, has been known to cause hysteria in the early stages and sleepiness or a stuporous condition in later stages. Hallucinations may result from heavy dosages. Marijuana intoxication will distort a person's perception of time and space, making driving extremely dangerous.

Use of amphetamines increases alertness and efficiency for a short period, but these temporary effects may be followed by headache, dizziness, fatigue, irritability, and a decreased ability to concentrate. Hallucinations may result in making driving particularly hazardous.

Tranquilizers and antihistamines can cause drowsiness especially if excessive dosages are used or used repeatedly. Tranquilizers can also cause blurred vision if the dosage is too great, while antihistamines may cause such side effects as inattention and confusion.

Barbiturates should never be taken if a person intends to drive because it is difficult to predict the effect on any one individual. Individual reactions vary depending upon dosage and can include drowsiness, confusion, difficulty in thinking, and even inability to coordinate muscular actions.

A number of other drugs such as dramamine (a motion sickness remedy), penicillin, sulfanilamides, and hallucinogens such as LSD can produce effects that can adversely affect driving ability. Dramamine may cause drowsiness, dull mental alertness, and slow a person's reaction time. Penicillin and sulfanilamides may cause violent and abnormal reactions. LSD and other hallucinogenic drugs affect the nervous system, producing changes in mood and behavior, and distorting one's perception of reality. Sight, hearing, and time perception are affected.

The total effect experienced by a person taking drugs in combination with alcohol is greater than the sum of the two effects. The intensity or magnitude of the effects is a function of the type of drug and alcohol taken, as well as the quantity of each. In addition, each individual's biological and emotional makeup plays a role in how he will react to alcohol and drugs taken separately or in combination. Studies regarding the interaction of alcohol and drugs have shown that when taken in combination they adversely affect performance on driver-related skills such as steering and tracking.

Depressant drugs, such as tranquilizers and antihistamines, taken with alcohol can produce unpredictable multiplicative effects. There is a greater chance that a person will become drowsier than if the depressant drug had been taken without alcohol.

Stimulants taken with alcohol in some cases counteract the effects of low concentrations of alcohol. Subjective feelings of increased alertness result, although they are not actually accompanied by improved motor skills. At other times, the depressant effects and skill impairment resulting from the alcohol are increased by the stimulant.

A review of driving records of known or convicted drug users shows that these people have much higher violation rates and in some cases higher accident rates than do average drivers.

A study of the driving records of over 200 drivers convicted of illegal drug use indicated that these drivers had no more accidents, but nearly twice the number of violations of other drivers.

The types of violations prevalent among drug users are similar to those for young drivers—speeding, defective equipment, improper registration, and driving while a license is revoked.

The driving records of a group of drug-dependent persons showed that their accident rates were about twice as high as expected for their age, sex, and driving exposure. Most of the excess was attributed to heavy amphetamine users, many of whom admitted having taken amphetamines prior to the accident. Those using barbiturates and alcohol, barbiturates alone, or tranquilizers had accident rates that were lower than expected, based on accident rates for all drivers.

The student should be aware of the regulations regarding driving when under the influence of alcohol and drugs and the penalties rendered if convicted for driving under their influence:

Most states use a concentration of .10% alcohol in the blood as the measure for presumption of driving "under the influence of intoxicating liquor." To comply with the federal standard, those states still using a .15% will have to adopt the lower limit.

A person convicted of driving under the influence of alcohol or drugs may be punished by imprisonment of 10 days to 1 year and/or by a one hundred- to one thousand-dollar fine. Subsequent convictions are punishable by at least 90 days in prison, a fine up to one thousand dollars and revocation of driver's license.

PURPOSE: To enable the student to become aware of physical and emotional conditions that may affect driving ability and how to compensate for such conditions.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Vision		The driver will ensure that his vision is adequate for safely carrying on driving responsibilities. In so doing he will: ● Have his eyes examined periodically. ● Consult an eye specialist before driving, if his vision is defective, to learn the nature and extent of the defect(s). ● Have corrective measures taken as soon as possible if vision is defective. ● Wear corrective glasses if necessary, making sure the correct pair is used if more than one type is prescribed. If visual defects are not correctable he will: ● Learn the limitations and types of errors that are likely. ● Compensate by listening more closely and turning the head more often. ● Avoid driving at night. To compensate for tunnel vision the student will move his eyes continuously to the left and to the right.	When driving for prolonged periods the driver will shift his eyes easily over the whole area of vision rather than hold them in a fixed position to avoid eye strain.		
Hearing			If a driver's hearing is defective, he will compensate by increasing his use of peripheral vision, by moving his eyes more frequently, and by using the rearview mirrors more often.	If using a hearing aid, the driver will check to see that it is operating properly before driving.	

Illness		The driver will determine the effect of medications for relieving colds from a physician and/or literature supplied with medications before attempting to drive. He will avoid driving during periods of minor discomfort such as when experiencing nausea or cramps, if it will distract his attention from driving. When afflicted with an acute illness, he will refrain from driving. When suffering from a chronic disease, he will drive only with a physician's approval and when following prescriptive measures.			
Emotions	The driver will avoid driving when in a highly emotional state because he will be preoccupied and distracted from the driving task; highly emotional states include the following: ● Anger ● Elation ● Excitement ● Frustration ● Irritation ● Sorrow ● Worry				
Fatigue		When feeling tired or drowsy the driver will keep at least one window open to allow fresh air to circulate and to reduce the possible inhalation of exhaust fumes entering the car through the floorboard.	The driver will maintain a cool even temperature inside the car in an effort to prevent or alleviate drowsiness or fatigue.		

KNOWLEDGES

The student must know the relation of a driver's physical and emotional condition to his ability to drive safely.

The safe driver is mentally alert and able to receive and register various cues from the driving environment. His capacity for receiving and responding to these cues is dependent upon his physical and emotional condition. The driver must know how to compensate for physical limitations and the importance of maintaining a stable emotional state when driving.

Temporary or permanent visual and auditory ailments limit the quality and quantity of cues the driver receives. His actions may be inappropriate for a particular driving situation, not because he is ignorant of the techniques and methods of a safe efficient driver, but because of a failure to receive cues due to a physical ailment. The American Optometric Association estimates that at least 35% of all drivers have visual problems which may be dangerous, and 15% of these drivers are unaware of the fact.

The requirement for good vision is further shown by accident statistics and studies investigating the association of accidents with visual defects.

Tests on accident repeaters have shown that 58% had tunnel vision and that three-fourths of their accidents were sideswipes.

Studies of drivers with one bad eye who had accidents at intersections indicate that the vast majority had their accidents on the side with the defective eye.

Driver failure to wear prescribed eye glasses was specifically noted as a factor in a number of the accident reports reviewed.

Data obtained under experimental conditions show that accident repeaters counseled about their visual defects reduced their accident rate by two-thirds, while repeaters who had not been counseled increased their accident rate by nearly one-half.

Some familiarity with the relationship of visual defects as a function of age and some recommended visual standards for drivers serve to indicate the need for assuring that one's vision is adequate for the driving task.

People should not drive if they have one of the following visual defects:

Less than 20/70 vision (corrected).

Between 20/40 and 20/70 vision (corrected) at night, during bad weather, or where visibility is restricted.

Visual field less than 140°.

Eye imbalance if it produces double vision suddenly.

Total color blindness.

In general, the total field of vision is at a maximum between ages 16 and 35 and decreases thereafter for both sexes. By age 60 there is measurable shrinkage.

Glare resistance is best between 20 and 29 years of age, but one in seven in this group is below average. In the 30-to-39 age range, one in three is substandard. After age 50, only one in seven has normal glare resistance.

The ability to perceive cues from the side is critical to accurate estimation of car velocity. The Association of Motor Vehicle Administration recommends that a driver should be able to see at least 70° sideways (one eye) when looking straight ahead. A normal eye can cover 90°. Tunnel eyes may not do better than 10°.

At least 90% of the cues that the driver must have to guide him in traffic are visual. The visual requirements can become demanding on long drives or in instances where there is a concentration of driving cues directly to the front, as in freeway driving. The eyes typically make short horizontal movements in the process of scanning the environment. When the driver scans the area over a prolonged period, a strain on the eye muscles generally results. In addition, when the driver is physically or mentally exhausted, drowsiness sets in whether or not there is eye muscle strain. The effects of fatigue upon driving and driving performance are:

When the eyes become tired the normal amount of eye coordination is reduced. When eye fatigue occurs, there may be a reduction in depth perception. This reduction is an important factor in judging distances. With tired eyes, the field of vision is also decreased and peripheral vision is impaired.

As fatigue sets in, objects seem farther away to the driver. A distortion of this type can be fatal if the driver is required to stop suddenly.

Perceptual skills and courtesy tend to deteriorate after several hours of continuous driving, but the driver's ability to control the car's direction and speed seems to remain constant despite fatigue. Over prolonged periods of driving, a decrease in driver attention is evidenced in a general tendency toward increased steering reversals, accelerator reversals, and speed variation. Within this trend, however, there are wide individual differences.

Good hearing is needed to detect sounds of emergency situations including horns, sirens, and screeching brakes. The ability to hear these sounds may prevent an accident from occurring.

Studies have shown that drivers with hearing problems have a greater number of accidents and violations than those with normal hearing.

A person with normal hearing is able to hear an ordinary spoken voice at 20 feet.

Because a developing hearing loss is frequently not noticed by the individual experiencing it, frequent hearing tests are needed, particularly in later years.

Fatigue effects can be minimized by countermeasures.

The eyes may become fatigued as a result of glare from the sun, shiny objects, or oncoming headlights. Sunglasses should be worn on bright days and when driving at night the driver should avoid looking at the headlights of oncoming traffic.

Carbon monoxide poisoning may aggravate or intensify normal driving fatigue and drowsiness. In addition to keeping at least one window open, certain precautionary measures can be taken to minimize the chances of carbon monoxide poisoning:

When traveling in slow-moving traffic or when driving through tunnels the air intakes should be temporarily closed; the engine should be shut off if delays are expected to be longer than a few minutes.

The garage door should be open if the car is inside the garage and the engine is running.

The muffler and tailpipe should be replaced if clogged or corroded. In addition, a bent or broken exhaust tailpipe should be straightened, repaired, or replaced.

Changing driving speed about every 15 or 20 minutes helps to prevent or overcome highway hypnosis, of which there are three forms: (a) velocitization—when affected with this condition the driver is unable to reckon his actual speed in terms of stopping distance; (b) high-speed hypnosis is a result of a trance caused by too smooth and straight high-speed driving; and (c) hypnogogic hallucinations is a condition in which the driver slams on the brakes to avoid striking a nonexistent object.

By shifting the eyes over the whole area of vision when driving, rather than keeping them steadily in a fixed position, the driver is less likely to become drowsy.

Talking, singing, chewing gum, eating, and drinking coffee or a soft drink aid in overcoming fatigue. In cars equipped with radios, the driver should tune in on sports and news programs or to some lively music.

Pulling over to the roadside or to a rest area at least every two hours helps to prevent or offset fatigue. While stopped the driver can stretch or exercise. The eyes can be closed during a rest stop to relieve any eye fatigue that has developed. If a concession is nearby, the driver should buy coffee, tea, or coke to offset fatigue. Washing the face and neck with water is also helpful.

Many accidents occur because the driver is exhausted due to physical exertion or mental activity. Both conditions can result in the driver falling asleep at the wheel. Supporting accident data show that:

An extremely high percentage of one-car accidents are caused by the driver falling asleep; on U.S. Route 66 there has been an unusually high percentage of accidents that can be attributed to falling asleep or dozing while driving. A straight cross-country high-speed highway such as U.S. 66 generally has a high proportion of accidents that are caused by falling asleep.

Extreme fatigue resulting in delayed reactions or falling asleep at the wheel was a primary cause in the sample of the accident reports received.

The driver should, if possible, refrain from driving when fatigued. In cases where it is necessary to drive, the driver should realize that his reactions are probably slowed, and should drive at a reduced speed, maintain greater following distance and should allow for a greater stopping distance.

It is questionable whether people suffering from chronic diseases or impairments should drive. The type and severity of the diseases and impairments are the determinants.

People suffering from the following diseases should never drive: uncontrolled diabetes, severe hyperthyroidism, acute hyper- and hypoparathyroidism, acromegaly, simmonds' disease, Cushing's disease, Addison's disease, abnormal heart condition, hypotension, or carotid sinus sensitivity leading to syncope, epilepsy with seizure history, Meniere's syndrome, severe arthritis, cerebral palsy, or later stages of muscular dystrophy.

When driving if an acute pain or feeling of discomfort develops, the driver should pull over, stop, and obtain assistance.

Special equipment has been designed for automobiles so that orthopedically disabled persons can drive with only their arms or only their feet.

Medically controlled epileptics and diabetics have been able to perform adequately in the driving environment.

Some data on the accident and traffic violation rate of people with cardiovascular disease, diabetes, and histories of epilepsy compared to people without medical conditions reveal the following:

Drivers known to have cardiovascular disease had 1.6 times as many accidents and 1.3 times as many violations as normal drivers; diabetics had 1.8 times as many accidents and 1.4 times the violations, and epileptics had 2.0 times the accidents and 1.4 times as many violations. These age-adjusted comparisons were based on accidents per million miles and violations per 100,000 miles.

Other data show that in a significant number of the accident reports surveyed, drivers suffered a heart attack or blackout spell at the wheel even though in most cases they were aware of this possibility from previous occurrences.

Emotions play an important role in the driving task. The manner in which a driver responds to the traffic situation depends largely upon his emotional state. Driving can be a frustrating task and can induce emotions in people such as anger or worry.

(Continued)

Whether one enters the driving situation in an emotional state or whether such a state develops as a result of the driving environment and task, the result can be the same; driving performance can be affected in a detrimental fashion. Both perception and judgment can be affected by a person's emotional state. Accident reports reviewed have shown that a moderately high percentage of the accidents listed the driver's emotional state as a contributing cause.

In addition to visual and auditory defects, fatigue, chronic illnesses, and emotional conditions, the temporary effects of alcohol can affect driving performance. Certain precautionary measures should be taken by the driver if it becomes necessary to drive after having consumed some alcohol:

> He should realize that his performance is somewhat impaired even though he feels well and particularly qualified.
>
> He should keep to the right and drive at a slower speed than he normally drives.
>
> He should watch closely for surrounding traffic and if possible isolate his car from other traffic by increasing his following and lateral distances.
>
> He should view the roadway and roadside closely for pedestrians, particularly at night. Close surveillance is necessary because consumption of alcohol reduces visual contrast sensitivity and decreases a driver's ability to detect pedestrians at night.
>
> He should take measures to offset fatigue as described above, keeping at least one window partially open for fresh air stimulation.

PURPOSE: To educate the student to maintain the car in sound operating condition through routine care and servicing.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Car Lights				At least once a month the driver will: ● Examine, or have a service station attendant examine, the car's lights for broken, cracked, or dirty lenses, and inoperative bulbs. In addition to the headlights, he will check the parking, brake, back-up, directional-turn signal, side-running, and tail-lights. He will have defective parts replaced as soon as possible. ● Wipe the light lenses clean.	
Tires and Wheels		If the tires become unsafe, the driver will replace them.	At least once a month the driver will examine the tires and wheels. In doing so, he will: ● Observe the sidewalls and tread for cuts, abrasions, and blisters. ● If cracks appear at the edge of the wheel rim near the hubcap, have the car inspected for possible wheel damage.	At least once a month the driver will examine the tires for material embedded in the tread and for uneven tread wear. He will: ● Remove foreign material from the tread or have it removed. ● Observe the nature of the uneven tread wear as a possible indication of the need for wheel alignment and/or balancing.	
Windshield, Windows, and Mirrors			At least monthly, the driver will inspect the rearview and side mirrors. As required, he will: ● Clean the glass. ● Tighten and adjust loose mirrors. ● Replace damaged mirrors.	At least once a month the driver will inspect and service the windshield wipers and washers, or have a service station attendant do so. In doing so, the driver or attendant will: ● Turn on the wipers and washers to check whether they are operating properly. ● Examine the condition of the wiper blade, remove grease from the blade, and replace worn blades. ● Check the washer-fluid level and add fluid if it is less than one-half full.	At least once a month the driver will inspect the windshield and windows for defects and have the damaged glass replaced.

Cooling System				At least once a month the driver will check the cooling system or have it checked. He will: ● Inspect the coolant level in the radiator, preferably when the engine is cold, and add coolant as required. To protect himself from being scalded when checking the coolant level, he will: ● ● Cover the radiator cap with a cloth and turn the cap slowly and cautiously until a hissing sound is heard. ● ● Stand back from the radiator while turning the cap. ● ● Wait until the pressure has been released and then turn the cap the rest of the way and remove it. ● ● Replace the radiator cap securely after checking the coolant. ● Inspect, or have a mechanic inspect, the condition of the radiator hoses, hose connections, and fan belt, and, as necessary, adjust or replace faulty parts. In doing so he will: ● ● Look for signs of hose leakage, or potential leakage due to hose deterioration or loose connections. ● ● Check the tension of the fan belt and look for worn spots and frayed edges on the belt. ● Inspect or have a mechanic inspect the condition of the radiator by looking for leaks, external damage, and obstacles to the air flow such as insects and leaves on the front of the radiator.	As necessary, the driver will have the radiator hose connections tightened, the fan belt adjusted, and damaged radiator hoses or fan belt replaced. As necessary, he will clear the front of the radiator of insects and leaves with an air hose or by other means.
Battery, Electrical System				At least once a month the driver will have the battery power and battery exterior checked. He will have: ● The electrolyte level checked and the battery recharged or replaced as necessary.	

PURPOSE: To educate the student to maintain the car in sound operating condition through routine care and servicing *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Battery, Electrical System *(Continued)*				● The battery case and cables checked for damage, cracks, or corrosion. ● Loose clamps and cable connections tightened, damaged or worn cables replaced, and a damaged battery carrier repaired or replaced. He will visually inspect the electrical circuits that are visible under the hood for loose connections and damaged wiring. As necessary, he will: ● Tighten loose connections or have them tightened. ● Have damaged, worn, or frayed electrical wiring replaced.	As necessary, the driver will replace the battery if it is warped, cracked, or otherwise damaged. If the battery and cables are corroded, he or a service station attendant will: ● Remove the corrosion with a baking-soda and water solution. ● Coat the battery terminal posts and cables with petroleum jelly to prevent further corrosion.
Steering and Suspension System			The driver will test the steering wheel for excessive play and have it adjusted if it can be turned two or more inches before the front wheels begin to turn.	At least once a month the driver will check the suspension system. He will: ● Look to see if the car lists or sags. If so, he will have the car checked for worn or broken springs and defective or badly adjusted torsion bars. ● Push down the bumper and observe the car's vertical motion. If the car continues in a downward motion after the force has been removed, he will have the shock absorbers checked.	
Braking System			The driver will check or have the braking system checked monthly. He will: ● If the brake pedal sinks forward	In checking the braking system, the driver will look for signs of brake-fluid leakage near the master cylinder and at the wheels.	

			after being depressed, ensure that the hydraulic system is checked for possible leaks. ● Have brake fluid added to the master cylinder, if necessary. ● If necessary, have the car checked for the source of brake-fluid leakage, particularly near the master cylinder and the wheels.		
Oil Level				At least once a month the driver will check the oil level or have it checked.	To obtain an accurate reading of the oil level, the driver will: ● Make sure the engine is hot. ● Turn off the ignition. ● Measure, or have a service station attendant measure, the oil level with the dipstick. In doing so, he will: ● ● Remove the dipstick and wipe it clean with a cloth. ● ● Reinsert the dipstick, then remove it to check the oil level. He will add oil if the oil level on the dipstick is at or below the "add oil" level. When it is necessary to add oil to the crankcase, the driver, or a service man, will: ● Remove the cap from the oil filler tube. ● Pour a quart of oil into the oil filler tube. ● Recheck the oil level with the dipstick. ● Add another quart, if necessary, but taking care not to overfill the tube. ● Replace the tube cap.
Drive Train				The driver will check the drive train or have it checked. In doing so, he will: ● Look for grease leaking from the transmission or rear-end assembly. ● Observe the level of automatic transmission fluid, with the dip stick, while the engine is running and if below the proper level, have transmission fluid added as recommended by the car manufacturer.	If grease leaks are noted from the transmission or rear assembly, the driver will have the car inspected for defective seals or other causes of leakage.

(Continued)

PURPOSE: To educate the student to maintain the car in sound operating condition through routine care and servicing *(Continued)*.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Drive Train *(Continued)*				● Check the amount of play in the clutch pedal (manual transmission). If the pedal can be pushed down more than one inch before the springs resist the pressure, he will have the clutch pedal checked and adjusted.	
Car Body Exterior			The driver will inspect, or have a qualified mechanic inspect, the muffler and tailpipe for excessive rust and have the defective sections replaced.	The driver will inspect the car body, the exterior trim, and attachments for looseness, damage, paint deterioration, rust, and corrosion.	As necessary, the driver will: ● Tighten, or have tightened, loose parts on the car's body, exterior trim, and attachments. ● Have damaged sections of the car's exterior repaired. ● Touch up paint scratches or have the car repainted. ● Clean off rust and corrosion and touch up the spots with sealant and paint to prevent further corrosion.
Interior					The driver will have worn or defective interior parts and equipment repaired or replaced to include controls, indicators, upholstery and springs, floor mats and carpeting.

KNOWLEDGES

The student must know that his car must receive routine care and servicing to reduce the chance of excessive wear on the parts, of breakdowns on the roadway, and of accidents resulting from malfunctions. Some inspections are part of predriving tasks to be performed each day; others are to be performed on each refueling trip to the service station; some inspections should be made monthly.

Burned-out light bulbs or sealed-beam headlight units usually can be easily and inexpensively replaced.

The student should know that the tires should be inspected at least monthly and know how to use a gauge to check inflation pressure. The automobile manufacturer's recommended inflation pressure should be followed, to include specific adjustments for oversized tires, estimated load weights, anticipated driving speed, and the differential for front and rear wheel tires. Tires should be inflated or deflated to the proper pressure, but the pressure must not be reduced if the tire is hot.

Underinflation shortens the life of a tire. In addition to causing excessive wear on the outside of the tread, underinflation also causes flexing of the tire cords, which in turn results in excessive heat buildup and weakening of the side fabric. Steering is also harder with underinflated tires.

Overinflation may cause excessive wear in the middle of the tread and degradation of the tire's capacity for absorbing road shock.

Proper tire pressure plays an important role in car performance on a curve. Cornering ability tends to improve with an increase in pressure at a constant load, due to the increase in sidewall stiffness.

Worn tires are a significant factor in the degradation of car stopping capability. A bald tire skids more easily and has increased probability for blowout or punctures. A groove depth of 1/16-inch tread remaining is a minimum acceptable requirement and tires should be replaced if less tread is remaining. The disablement rate rises sharply for tires with less than 1/16-inch tread remaining. Some tires possess a tread bar marking which becomes visible when the tread remaining is at the minimum acceptable limit.

About 2% of accidents during normal driving are caused by tire failures.

Of 1,000 accident reports recently surveyed, excessively worn, damaged or underinflated tires were noted in a significant number of cases.

A monthly check of the windshield washer fluid level insures that fluid will be available when it is needed. A small amount of windshield washer liquid (antifreeze) may be used for better cleaning in warm weather.

The car manufacturer's recommended type of coolant for the season should be used.

A fully charged battery and properly functioning ignition system make it easy to start the engine quickly. Several million drivers experience roadway malfunctions each year because of battery failures.

Proper maintenance of the steering and suspension system is important to the accuracy of steering control and the stability of the car. For example, properly functioning shock absorbers increase cornering ability as they work with friction and gravity to combat centrifugal force. Poor maintenance in this area was cited as a contributory cause in numerous accident reports surveyed.

Too much play in the steering wheel diminishes steering control and indicates either wear in the steering column, which can be adjusted, or worn tie rod ends. If the situation is not corrected, too much play in the steering wheel could result in failure of the steering system and complete loss of steering control.

Defects in the suspension system can degrade the steering and stability of the car. Lowering of the front end just an inch or an inch and one-half may reduce the maximum safe speed of the car 10 or more miles per hour (e.g., 65 to 55 miles per hour) by affecting the car's stability.

A poorly maintained braking system was noted in a significant number of accident reports reviewed.

Oil serves to lubricate the engine and to reduce the friction between its moving parts. Regular checks when the engine is hot will minimize the possibility of the oil level dropping to a low level. If the oil level is so low the oil pump cannot circulate the oil properly, the engine can be damaged.

The ignition must be turned off in order for the oil to be checked. Waiting a few minutes before checking will allow the oil to settle in the crankcase and will yield a more accurate reading.

Without adequate oil to keep the moving parts of the engine well lubricated, the parts will rub together and generate a great deal of heat. Both the friction and excess heat will cause damage to the engine very quickly.

Regular oil changes every few thousand miles are necessary to remove dirty oil. Oil picks up dirt, water, acid, and other substances that lessen its lubricating effectiveness and could cause additional friction between the parts if cycled through the system.

Use of the same grade and brand of oil is recommended by most mechanics to avoid mixing additives that may be incompatible. Additives vary among brands, and different additives may not work together properly.

Overfilling with oil is wasteful and may also harm the engine by foaming and failing to lubricate effectively.

(Continued)

The amount of resistance or "play" in the clutch can be a clue to malfunctions.

Too much play in the clutch pedal (i.e., it sinks to the floor quickly) may indicate that the clutch isn't disengaging completely and difficulty in shifting gears may occur.

Too little play may signal a slippage and could result in excessive wear of the clutch mechanism if not corrected.

Mufflers and tailpipes are subject to rust on both the interior and exterior walls. A worn muffler is less effective in reducing noise, and a worn tailpipe will not control the exhaust emissions as intended. Moisture from exhaust gases collects on the inside of the muffler and tailpipe and causes interior rust. This situation occurs mostly as a result of short-trip driving where the exhaust system doesn't get completely warmed up. Dual exhaust systems rust quicker than single exhaust systems because they warm up slower. Water, snow, and salt from winter streets cause exterior rusting of the muffler and tailpipe.

Refueling the gasoline tank when the tank is one-fourth full or more cuts down on the probability of condensation forming in the tank and reduces the chance of pumping sediment through the gas line and of running out of gas.

PURPOSE: To educate the student to have the car inspected and serviced in accordance with the recommendations of the manufacturer.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Inspection			On a schedule recommended in the car owner's manual, the driver will have a qualified mechanic inspect: ● The steering and suspension system, to include the steering column assembly, steering linkage, power steering unit and reservoir, if the car is so equipped, front end alignment, wheel balance, wheel bearings, springs, shock absorbers, and tires. ● The braking system, to include the brake shoes, lining, and drum or the discs and disc pads if the car has disc brakes, the power brake unit, if the car is so equipped, the brake pedal linkage, master cylinder, wheel cylinders, and fluid lines. ● The exhaust and smog control system, to include the exhaust manifold and pipe, muffler, tailpipe, positive crankcase ventilation system, and exhaust emission control device.	As recommended in the owner's manual, the driver will have a qualified mechanic inspect: ● The alignment and brightness of the headlights. ● The drive train, to include the clutch assembly and pedal linkage in a manual transmission car, the transmission, the driveshaft, universal joints, differential, and rear axle. He will have the car inspected in compliance with state and local safety inspection requirements.	As recommended in the owner's manual, the driver will have a qualified mechanic: ● Check the air filter, oil filter, oil pump, radiator water hoses, water pump, thermostat, and fan belt.
Servicing				The student will have the car regularly serviced at intervals recommended by the car manufacturer. Whenever deficiencies are noted, e.g., while driving, as a result of a safety inspection, or during servicing, the student will have the parts serviced or repaired.	As recommended in the owner's manual, the driver will service his car or have it serviced in preparation for seasonal changes.

KNOWLEDGES

The student must know that a systematic program of inspection and servicing will help to identify existing and potential car malfunctions, serve as a preventive measure to lessen the number of accidents due to car malfunctions, and lessen the number of car breakdowns.

Headlight defects are prevalent, and misalignments of even a degree or two greatly affect visibility. For example:

Of 3,000,000 cars checked on the highways in one year, 69% had headlight defects.

State inspection programs found headlight defects in 20 to 30% of the cars inspected.

A national safety check found defective headlights to be the second most prevalent defect.

Headlights aimed one to two degrees upward will reduce the normal visibility of an oncoming driver by 25%. Lights misaligned downward have little effect on oncoming drivers. However, headlights misaligned downward by one degree reduce the driver's visibility by 50%.

The steering and suspension system, the front end alignment, wheel, balance, and condition of the tires seem to present frequent problems.

State inspections were failed in 43% of car front ends.

Wheels frequently are found to be 6 to 12 ounces out of balance. Wheel imbalance causes a vibration which is a considerable fatigue factor, especially at higher speeds. Excessive or uneven tire wear is another result of wheel imbalance.

Of the estimated breakdowns in one recent year, 20% were attributed to tire problems.

Tires should be rotated every 5,000 miles to ensure even wear. The recommended method for rotation is: left front to left rear, left rear to right front, right front to right rear, right rear to spare, and spare to left front. Tires will get up to 25% more wear when the spare is included in the rotation scheme. Some experts denounce tire rotation entirely. They feel that good tread is so important that tires should be replaced when wear is noticeable rather than rotated for even wear. If replaced when worn, rotation becomes unnecessary.

In one year, battery and electrical problems accounted for 43% of the estimated automobile breakdowns.

Brake defects were found in 10 to 20% of the cars that underwent state inspection.

The exhaust and smog control system should be inspected periodically and adjusted to maintain the desired levels of crankcase and exhaust emissions.

PURPOSE: To educate the student to have the car repaired in response to breakdowns, symptoms of malfunctions, and deficiencies noted during inspection and servicing.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Initiating Repairs				The driver will have the car repaired as soon as possible after deficiencies are noted during routine or periodic inspection and servicing. He will initiate repair as soon as possible after the car has broken down.	
Steering			The driver will have the steering system inspected and repaired if: ● The car wanders from side to side. ● The car drifts or pulls to the right or left. ● The ease of handling a car with power steering is lost on sharp turns. ● Steering is more difficult. ● The car vibrates at certain speeds. ● The steering wheel vibrates rapidly or shakes from side to side. ● There is excessive play in the steering wheel.		
Braking		The driver will have the car brake system inspected and repaired if during normal driving he observes the following symptoms when the brakes are applied: ● The car pulls to one side. ● The brake pedal begins to go down to the floor during sustained application. ● A scraping or any other unusual sound is heard. ● Less than two inches of clearance remain between the brake pedal and the floor board.			
Suspension System and Wheels		The driver will have suspension system and wheels of the car inspected and repaired if: ● A clanking sound is heard as the wheels rotate. ● There is a thumping sound in the chassis as the wheels rotate.			

		● The rear end of the car sways inordinately when driving around corners. ● The rear end bounces excessively when passing over bumps. ● There is the smell of burning rubber.			
Transmission System				The driver will initiate inspection and repair of the transmission system when: ● The clutch pedal has too much or too little play. ● A growl or rumble is heard in the higher ranges of each gear. ● An automatic transmission car hesitates or bucks during acceleration.	
Exhaust System				The driver will initiate inspection and repair of the exhaust system when: ● The exhaust is excessively noisy or gives off a hissing sound. ● Blue puffs of smoke are emitted from the system during acceleration.	
Lubrication and Cooling System				The driver will initiate inspection and repair of the engine lubrication and cooling system when: ● The temperature gauge reaches the far-right (hot) position or the temperature warning light goes on. ● With the temperature gauge registering "hot", the ammeter display or warning light indicates the battery is discharging. ● The oil pressure gauge falls to, or remains at, the minimum position or the warning light goes on when the engine is running above idle speed.	
Engine				The driver will initiate inspection and repair of the engine when: ● A loud metallic tapping sound is heard during pull but tends to disappear as the strain on the engine decreases. ● A moderate metallic slapping sound is heard. ● The engine occasionally misses at idling or low speed or when accelerating or driving at high speed. ● A rapid hammering sound occurs between accelerating and decelerating periods or as the engine changes from pulling to drifting.	

PURPOSE: To educate the student to have the car repaired in response to breakdowns, symptoms of malfunctions, and deficiencies noted during inspection and servicing *(Continued).*

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Engine *(Continued)*				● A whistling sound, a loud swish, an explosive noise, a ping, or a knock is coming from the engine.	
Electrical System				The driver will initiate inspection and repair of the electrical system when the ammeter gauge or light shows discharge, even though all the electrical switches are turned off or the engine is running rapidly.	

KNOWLEDGES

The student must know that repairs should be performed whenever deficiencies are noted during routine care, periodic inspection and servicing, breakdowns, or normal driving.

The car wandering from side to side may indicate unequal tire inflation, faulty wheel alignment, faulty shock absorbers, or a broken spring.

If the car steers hard it may be due to unequal or underinflated tires, inadequate lubrication, improper wheel alignment, or worn or improperly adjusted steering system parts.

If the car pulls to one side when the brakes are applied, the brakes should be checked for damaged wheel cylinder, bent wheel, or grease on the brake lining. If all four wheels are not braking equally, the braking distance will increase and steering may be unpredictable.

A scraping sound when the brakes are applied may be due to worn wheel bearings which may be caused by either the drum rubbing on the backing plate or drag on the brake shoes.

A thumping sound in the chassis as the wheels rotate suggests that the tires should be checked for blisters. The wheel bearings and pinion bearings should be checked for wear and tightness. The sound may also be due to improper lubrication of the drive shaft.

A growl or rumble in the higher ranges of each gear can be indicative of excessive wear in the transmission parts.

The muffler and exhaust pipe should be checked for damage if loud noise comes from the exhaust.

Occasional "missing" of the engine at idling or low speed may be due to an improper fuel mixture, dirty or defective spark plugs, or improper operation of the distributor and ignition timing.

The generator/alternator may be malfunctioning if the ammeter shows discharge even though all of the electrical switches are turned off or when the engine is running rapidly.

PURPOSE: To inform the student about driver and car certification.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Obtaining a License		The driver will obtain a driver's license and adhere to any restrictions on the license when driving.		If his operator's license is lost or stolen, the driver will obtain a duplicate from the state licensing agency. The driver will apply for license renewal prior to the expiration date. The driver will not use a license belonging to someone else, nor will he allow another driver to use his license.	The driver will carry a valid driver's license at all times when driving. The driver will notify the proper state agency when there is a change of name or address.
Complying with Inspection Requirements		The driver will have all car deficiencies corrected as soon as possible after discovering or being alerted to them.	The driver will comply with safety inspection requirements where they are applicable.	The driver will have his car inspected at an authorized inspection facility at required intervals.	

KNOWLEDGES

The student must know the procedures for obtaining a driver's license. He must also know the following regarding car certification:

> When buying a car or moving to another state the driver must obtain a registration certificate and license plates from the state motor vehicle department. All cars driven must be registered and have license plates displayed to indicate that someone has legal custody of the car.
>
> The owner of the car must have a certificate of ownership.
>
> The car registration should be carried on the driver or in the car at all times.
>
> The registration certificate must be renewed prior to expiration date.
>
> The car ownership certificate should be placed in a safe place in the home. It should not be kept in the car.

The student must have the inspection sticker displayed as directed by state authorities. The student must be aware of any regulations requiring inspection and/or insurance before registering the car.

PURPOSE: To educate the student on the post-accident responsibilities of the driver.

CATEGORY	CRITICALITY				
	HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
Stopping			When involved in an accident, the driver will stop the car close to the scene if the car is not stopped by the impact. He will position the car, if possible, so that traffic may pass safely.	When involved in an accident, the driver will shut off the ignition and lights to prevent electrical sparks. He will avoid smoking and instruct passengers, if any, to avoid smoking if gasoline has spilled onto the roadway.	
Sending for Police				The driver will send for the police if anyone has been injured or if property damage is estimated to exceed the local minimum reporting level as specified by local law.	
Offering to Assist Injured			The driver will remove injured person(s) from the area only after receiving permission. When offering assistance to the injured, he will limit such assistance to first aid, insuring that it does not extend to treatment. In so doing, he will refrain from giving the injured anything to drink or anything to relieve pain.	The driver will apply a pressure bandage to control excessive bleeding. He will not try to reset a broken bone.	When offering assistance to the injured, the driver will cover the injured with a blanket or coat, particularly when they are burned.
Warning Traffic			If possible, the driver will station someone to warn approaching traffic of the accident.	If the accident occurs at night, the driver, if able, will set flares or warning lights 200-300 yards back on the roadway to warn other traffic of the accident.	
Exchanging Information			If witnesses are present the driver will obtain their names and addresses.	The driver will check all apparent damage and make notations when gathering and exchanging information for the accident report. He will: ● Obtain the name and address of the other driver, his insurance company, his	

				license and registration numbers, and the make and model of his car. ● Ask to see the other driver's operator's license. ● Give his name and address to the other driver, person attending the other vehicle or property, and to the police. When no one is available to receive or exchange information, and damage appears to be less than $100, the driver will: ● Attempt to locate the owner of the damaged property. ● Attach a note with his name, address, and telephone number in a conspicuous place on the vehicle or property if he is unable to locate the owner. When recording the circumstances surrounding the accident, he will note the traffic control devices. He will record whether or not traffic lights were functioning, and the color of the light at the time of the accident, if possible.	Upon request of the other driver, the driver will show his registration and driver's license or permit. When recording the circumstances surrounding the accident, he will note the direction of travel, the exact place where the point of impact occurred, where the cars stopped, and the length of any skid marks. He will not offer nor accept payment at the accident scene.
Reporting				The driver will report the accident within the specified period of time to the appropriate agency if a report was not submitted at the time of the accident.	The driver will notify his insurance company of the accident as soon as possible.

KNOWLEDGES

The driver must know he has post-accident legal responsibilities.

He must report the accident, obtain accurate information from parties involved in the accident and any witnesses, and must file an accident report to the proper authorities.

In most states the drivers involved have the legal responsibility to report an accident if there is a personal injury or if property damage appears to equal or exceed $100.

Any driver involved in an accident must comply with giving his name, address, vehicle registration, and any assistance required.

If a driver fails to stop and/or render assistance, or give the required information, he may, upon conviction, be imprisoned for 30 days to as much as one year and/or fined a minimum of one-hundred dollars to a maximum of one-thousand dollars, in addition to having his driving privileges revoked.

Obtaining accurate accident information is critical.

Carrying an accident information form in the car for such emergencies would facilitate collecting all the information required.

Obtaining signed statements from witnesses would protect the driver against excessive damage claims and are important if criminal charges are filed against him.

Obtaining signed statements from bystanders who deny having seen the accident would prevent them from appearing as witnesses against the driver at a later date. This should be done if a driver feels that the bystanders did in fact see the accident.

All states have an accident report requirement or financial responsibility laws requiring reports.

Financial responsibility laws of most states require drivers involved in accidents to establish their ability to pay justifiable claims. Liability applies to injury and property damage.

Any person knowingly giving false information in an accident report can be fined up to one-thousand dollars and/or imprisoned for up to one year.

Failure to report an accident to the insurance company could result in cancellation of the driver's policy.

Rendering assistance to the injured should be done only after certain protective precautions have been taken.

Assistance is offered to the injured person if he is conscious and is given only with his permission. If the injured person is unconscious, permission is obtained only from a blood relative (spouse, parent, sibling, or offspring of legal age). If no blood relative is available, first aid is performed to the best of the driver's knowledge and ability with the materials available.

If assistance is refused, the driver can not touch the injured person, without placing himself in a precarious legal position.

If permission is granted to remove the injured from the roadway, the spot where the person was lying should be marked. It is also helpful to know how the person was lying.

Part II

Evaluation Instrument

THE DRIVING FUNDAMENTALS TEST

(AUTOMATIC SHIFT)

Driver's Name:__________________________ Date:____________

Examiner's Name:____

Time: From:________________ To:_____________________

Instructions:

Evaluate the performance of the driver for each item within all sequences. Mark either P (pass) or F (fail) each time an item is completed.

Remember that the driver is to be marked on what he does or does not do, not on what he knows.

SEQUENCE 1 - Pre-Driving Inspection

Check that the student is wearing corrective lenses and/or hearing device as required.

Say to the person being examined:

"First make sure your car is ready to go. Then get in and put the key in the ignition, but do not start the engine."

OBSERVE:

Driver inspects tires-- P F

Driver able to place foot on floorboard with slight bend in knee and easily reach all controls-- P F

Driver able to see over steering wheel without strain-- P F

Rearview mirror adjusted to center on road behind-- P F

Side mirror adjusted so that left edge of car is barely visible from normal driving position-- P F

Driver ascertains all doors closed and locked-- P F

SEQUENCE 2 - Starting

Say to the person being examined:

"Start the engine, and prepare to drive."

OBSERVE (not necessarily in order):

Seat belt fastened-- P F

Shoulder harness fastened-- P F

Gearshift in Park or Neutral-- P F

Choke set manually or by depressing accelerator-- P F

Accelerator not pumped unless weather cold-- P F

Starting motor continues to spin after engine starts-- P F

Does not stall or race engine-- P F

SEQUENCE 3 - Accelerating Forward

Say to the person being examined:

"Now I want you to move the car forward about 40 feet, then stop."

OBSERVE:

Left foot on brake-- P F

Gearshift in drive or low--- P F

Does not race engine, or lurch forward-- P F

Does not stall engine--- P F

Accelerates smoothly-- P F

Grips upper half of steering wheel rim with both hands------------------------ P F

Regulates speed by releasing brake and activating accelerator----------------- P F

Keeps left foot positioned over brake for sudden stop------------------------- P F

Places either left or right foot squarely on the brake pedal before stopping----- P F

Applies brake lightly to bring car to a smooth stop--------------------------- P F

Places gearshift in Neutral or Park--- P F

SEQUENCE 4 - Accelerating Backward

Say to the person being examined:

"I want you to move the car backward to where we started and come to a stop."

OBSERVE:

Turns upper body and face to look to the rear--------------------------------- P F

Left foot on brake-- P F

Gearshift in reverse-- P F

Does not race engine or lurch backward-- P F

Does not stall engine--- P F

Accelerates smoothly-- P F

Regulates speed by releasing brake and activating accelerator----------------- P F

Keeps left foot positioned over brake for sudden stop------------------------- P F

Places either left or right foot squarely on the brake pedal before stopping----- P F

Applies brake lightly to bring car to a smooth stop--------------------------- P F

Places gearshift in Neutral or Park--- P F

SEQUENCE 5 - Parallel Parking

Say to the person being examined:

"Position the car so that you can back into the space between those two vehicles. Prepare to park. Do not back up, just get ready to do so."

OBSERVE:

Car alongside and about two feet from lead vehicle---------------------------- P F

FA

Say to the person being examined:

"All right, back up and park."

OBSERVE:

Backs slowly while turning steering wheel sharply to the right------------- P F

Uses hand over hand technique-- P F

Straightens wheel when back of front seat is in line with the rear of lead parked vehicle-- P F

Looks front while clearing parked vehicle------------------------------ P F

Turns steering wheel sharply left when front of car clears rear of lead vehicle-- P F

Uses hand over hand technique-- P F

Stops just short of vehicle parked behind------------------------------ P F

Centers car in space no more than one foot from curb---------------------- P F

SEQUENCE 6 - Perpendicular Parking

Say to the person being examined:

"Which two of those traffic cones could you safely drive this car between without knocking one down?"

OBSERVE:

Driver points to space between the two cones that are one and one-half car widths apart-- P F

Say to the person being examined:

"Now I want you to pull out again next to the car in front of us."

OBSERVE:

Does not touch vehicle behind-- P F

Turns steering wheel sharply toward roadway-------------------------------- P F

Moves forward slowly, making sure car will clear bumper of vehicle ahead--- P F

Say to the person being examined:

"Now I want you to position the car so that you can back between those two cars and park perpendicular to the flow of traffic. Do not back up. Just get ready to do so."

OBSERVE:

Car about four feet out from parked vehicles------------------------------- P F

Back bumper at near side of space-- P F

FA

Say to the person being examined:

"All right, back the car in and between these two vehicles."

OBSERVE:

Looks to the rear--- P F

Checks door clearance--- P F

Checks rear fender clearance-------------------------------------- P F

Car centered to allow room for opening doors------------------------ P F

SEQUENCE 7 - Accelerating

Direct the person being examined to a section of roadway where 25 mph speed is permissible.

OBSERVE WHILE LEAVING PERPENDICULAR PARKING SPACE:

Moves straight forward slowly a few feet to ensure clearance from adjacent vehicles when turning---------------------------------- P F

Checks that rear fender will clear adjacent vehicle------------------ P F

Say to the person being examined:

"Now I want you to start out from a dead stop and accelerate up to 25 mph. Continue to drive at the 25 mph speed."

OBSERVE:

Left foot on brake-- P F

Gearshift in drive-- P F

Does not race engine or lurch forward------------------------------- P F

Does not stall engine--- P F

Accelerates smoothly to 25 mph-------------------------------------- P F

SEQUENCE 8 - Slowing Down

Ascertain there is no following traffic, then say to the person being examined:

"Now I want you to slow down as though you were going to turn at the next corner."

OBSERVE:

Removes foot from accelerator--------------------------------------- P F

Applies brake at the correct time------------------------------------ P F

Slows smoothly-- P F

Slows to correct speed--- P F

P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F

P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F

P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F

270/

SEQUENCE 9 - Turning Right

Select uncontrolled intersection, ascertain there is no traffic immediately behind and say to the person being examined:

"Now I want you to prepare to turn right at the next intersection."

Then say:

"Go ahead and complete the turn."

OBSERVE:

	FA
Activates directional signal. No closer than 100 feet from intersection	P F
Checks traffic to the left	P F
Checks to the right for vehicles in intended lane	P F
Positions car in far right lane so that it can clear the corner and fully remain within the intended lane	P F
Keeps both hands on outside of steering wheel rim	P F
Turns so as to avoid crossing center of lane, yet not so sharply as to cause right rear wheel to cut corner	P F
Turns steering wheel in opposite direction at the proper time to round out smoothly	P F
Accelerates slightly during turn, but does not exceed 15 mph nor fall below 5 mph	P F
If wheel is allowed to return by slipping, grasps outside of wheel slightly with palms	P F

SEQUENCE 10 - Turning Left

Select uncontrolled intersection, ascertain there is no traffic immediately behind and say to the person being examined:

"Now I want you to prepare to turn left at the next intersection."

Then say:

"Go ahead and complete the turn."

OBSERVE:

	FA
Activates directional signal. No closer than 100 feet from intersection	P F
Checks traffic to the left	P F
Checks blind spot	P F
Positions car in far left lane	P F
Keeps both hands on outside of steering wheel rim	P F
Does not shift gears during turn	P F
Does not cross center line until reaching the center of the intersection	P F
Turns into first lane to right of center line	P F
Turns steering wheel at the proper time to round out smoothly	P F

FA

If wheel is allowed to return by slipping, grasps outside of wheel slightly with palms---------------------- P F

SEQUENCE 11 - Rapid Stopping

Select appropriate stretch with no hidden entrances and no vehicles immediately behind, and say to the person being examined:

"Now when I say 'stop,' I want you to give a hand signal and come to a stop as quickly as you can without skidding. Do it as you would on the road. All right, stop."

OBSERVE:

Places either right or left foot squarely on the brake pedal--- P F

Taps brake to flash brake light-------------------------- P F

Applies brake in a series of pumping motions------------- P F

Eases brake pressure momentarily and then applies it firmly and evenly to bring car to a smooth stop---------- P F

SEQUENCE 12 - Passing Gear

Say to the person being examined:

"Now I want you to accelerate to 25 mph and then put the car in passing gear when I tell you."

When speed reaches 25 mph say:

"All right, now."

OBSERVE:

Presses accelerator to the floor, and puts car in passing gear-- P F

SEQUENCE 13 - Pulling to the Curb

Direct the person being examined to the point of origin. Then say:

"When I tell you to, I want you to pull over to the side of the street and stop. All right, now."

OBSERVE:

Signals right turn--------------------------------------- P F

Gives hand signal to slow down--------------------------- P F

Reduces speed to 10 mph, doesn't slow down excessively on the roadway---------------------------------- P F

Pulls to the edge of the roadway quickly, but smoothly-- P F

Brings car to a quick smooth stop------------------------ P F

Stops within 1 foot of the edge of the road-------------- P F

Places shift in Park position---------------------------- P F

Sets parking brake--------------------------------------- P F

THE DRIVING FUNDAMENTALS TEST (AUTOMATIC SHIFT)

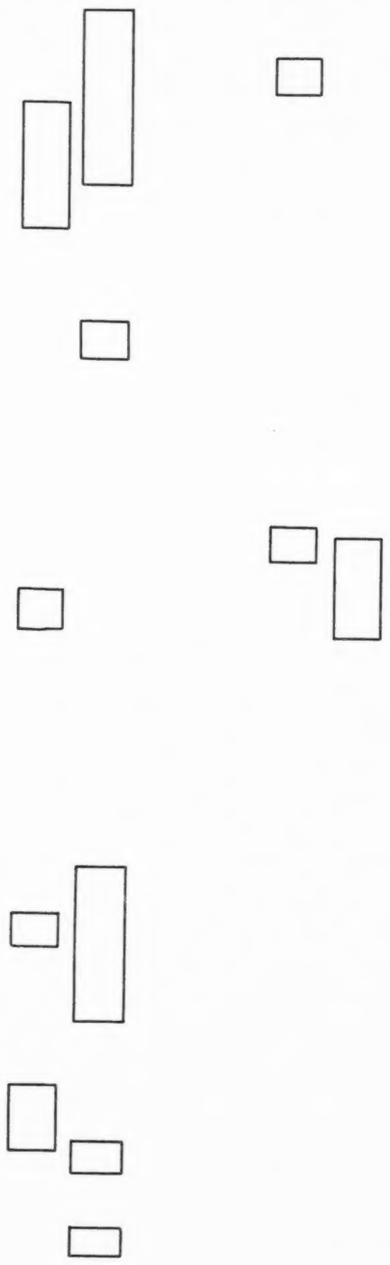
SCORING SHEET

P F

P F
P F
P F
P F
P F
P F
P F P F
P F
P F
P F
P F
P F
P F P F
P F
P F
P F P F
P F
P F
P F
P F
P F
P F
P F P F
P F
P F
P F
P F
P F
P F
P F
P F P F P F
P F P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F
P F P F
P F P F
P F
P F P F
P F P F
P F
P F P F
P F
P F
P F
P F P F
P F
P F P F P F
P F P F
P F
P F P F
P F
P F
P F
P F
P F

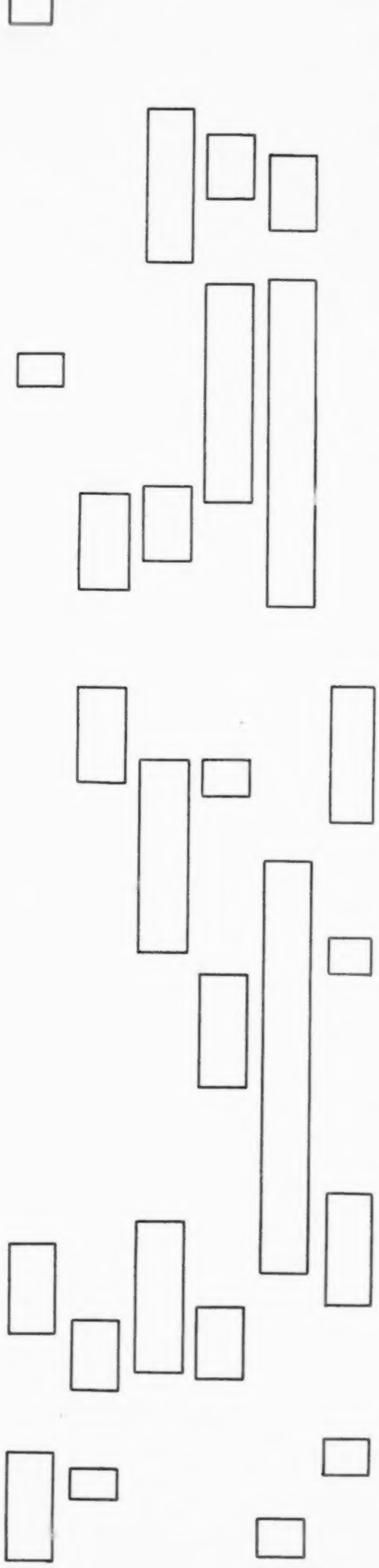
THE DRIVING FUNDAMENTALS TEST (AUTOMATIC SHIFT) SCORING STENCIL

MODERATELY HIGH CRITICALITY ITEMS



THE DRIVING FUNDAMENTALS TEST (AUTOMATIC SHIFT) SCORING STENCIL

MODERATE AND MODERATELY LOW CRITICALITY ITEMS



THE DRIVING FUNDAMENTALS TEST (AUTOMATIC SHIFT) SCORING STENCIL

LOW CRITICALITY ITEMS

THE DRIVING FUNDAMENTALS TEST

(MANUAL SHIFT)

Driver's Name:______________________Date:________________

Examiner's Name:____

Time: From:________________ To:____________________

Instructions:

Evaluate the performance of the driver for each item within all sequences. Mark either P (pass) or F (fail) each time an item is completed.

Remember that the driver is to be marked on what he does or does not do, not on what he knows.

SEQUENCE 1 - Pre-Driving Inspection

Check that the student is wearing corrective lenses and/or hearing device as required.

Say to the person being examined:

"First make sure your car is ready to go. Then get in and put the key in the ignition, but do not start the engine."

OBSERVE:

Driver inspects tires--	P F
Driver able to place foot on floorboard with slight bend in knee and easily reach all controls--	P F
Driver able to see over steering wheel without strain--	P F
Rearview mirror adjusted to center on road behind--	P F
Side mirror adjusted so that left edge of car is barely visible from normal driving position--	P F
Driver ascertains all doors closed and locked--	P F

SEQUENCE 2 - Starting

Say to the person being examined:

"Start the engine, and prepare to drive."

OBSERVE (not necessarily in order):

Seat belt fastened--	P F
Shoulder harness fastened--	P F
Gearshift in Neutral--	P F
Clutch depressed--	P F
Choke set manually or by depressing accelerator--	P F
Accelerator not pumped unless weather cold--	P F
Starting motor continues to spin after engine starts--	P F
Does not stall or race engine--	P F

FM

SEQUENCE 3 - Accelerating Forward

Say to the person being examined:

"Now I want you to move the car forward about 40 feet, then stop."

OBSERVE:

Left foot on clutch---------- P F
Clutch depressed---------- P F
Gearshift in first---------- P F
Coordinates clutch and accelerator to move away smoothly---------- P F
Does not stall engine---------- P F
Accelerates smoothly---------- P F
Grips upper half of steering wheel rim with both hands---------- P F
Regulates speed by releasing clutch and activating accelerator---------- P F
Keeps left foot positioned over clutch for sudden stop---------- P F
Places right foot squarely on the brake pedal before stopping---------- P F
Depresses clutch before stopping---------- P F
Applies brake lightly to bring car to a smooth stop---------- P F
Places gearshift in Neutral---------- P F P F
Releases clutch---------- P F

P F

P F

SEQUENCE 4 - Accelerating Backward

P F

Say to the person being examined:

"I want you to move the car backward to where we started and come to a stop." P F

OBSERVE: P F

Turns upper body and face to look to the rear---------- P F
Left foot on clutch---------- P F
Clutch depressed---------- P F
Gearshift in reverse---------- P F
Coordinates clutch and accelerator to move away smoothly---------- P F
Does not stall engine---------- P F P F
Accelerates smoothly---------- P F P F
Regulates speed by releasing clutch and activating accelerator---------- P F P F
Keeps left foot positioned over clutch for sudden stop---------- P F P F
Places right foot squarely on the brake pedal before stopping---------- P F P F
Depresses clutch before stopping---------- P F P F
Applies brake lightly to bring car to a smooth stop---------- P F P F
Places gearshift in Neutral---------- P F P F
Releases clutch---------- P F

FM

SEQUENCE 5 - Parallel Parking

Say to the person being examined:

"Position the car so that you can back into the space between those two vehicles. Prepare to park. Do not park, just get ready to do so."

OBSERVE:

Car alongside and about two feet from lead vehicle------------------------ P F

Say to the person being examined:

"All right, back up and park."

OBSERVE:

Backs slowly while turning steering wheel sharply to the right------------ P F

Uses hand over hand technique--- P F

Straightens wheel when back of front seat is in line with the rear of lead parked vehicle--- P F

Looks front while clearing parked vehicle--------------------------------- P F

Turns steering wheel sharply left when front of car clears rear of lead vehicle--- P F

Uses hand over hand technique--- P F

Stops just short of vehicle parked behind--------------------------------- P F

Centers car in space no more than one foot from curb---------------------- P F

SEQUENCE 6 - Perpendicular Parking

Say to the person being examined:

"Which two of those traffic cones could you safely drive this car between without knocking one down?"

OBSERVE:

Driver points to space between the two cones that are one and one-half car widths apart--- P F

Say to the person being examined:

"Now I want you to pull out again next to the car in front of us."

OBSERVE:

Does not touch vehicle behind--- P F

Turns steering wheel sharply toward roadway-------------------------------- P F

Moves forward slowly, making sure car will clear bumper of vehicle ahead--- P F

FM

Say to the person being examined:

"Now I want you to position the car so that you can back between those two cars and park perpendicular to the flow of traffic. Do not back up. Just get ready to do so."

OBSERVE:

Car about four feet out from parked vehicles------------------------- P F

Back bumper at near side of space---------------------------------- P F

Say to the person being examined:

"All right, back the car in and between these two vehicles."

OBSERVE:

Looks to the rear-- P F

Checks door clearance-- P F

Checks rear fender clearance--------------------------------------- P F

Car centered to allow room for opening doors------------------------ P F

SEQUENCE 7 - Shifting

Direct the person being examined to a section of roadway where 25 mph speed is permissible.

OBSERVE WHILE LEAVING PERPENDICULAR PARKING SPACE:

Moves straight forward slowly a few feet to ensure clearance from adjacent vehicles when turning---------------------------------- P F

Checks that rear fender will clear adjacent vehicle------------------ P F

Say to the person being examined:

"Now I want you to start out from a dead stop and accelerate up to 25 mph. Shift gears as necessary. Continue to drive at the 25 mph speed."

OBSERVE:

Left foot on clutch-- P F

Clutch Depressed--- P F

Gearshift in first--- P F

Coordinates accelerator and clutch to move away smoothly------------- P F

Does not stall engine-- P F

Accelerates smoothly--- P F

Depresses clutch pedal completely and removes foot from accelerator pedal-- P F

Moves gearshift to second smoothly--------------------------------- P F

Coordinates clutch and accelerator for smooth transition------------- P F

Releases clutch pedal completely------------------------------------ P F

Accelerates smoothly--- P F

FM

Moves gearshift to third-- P F

Coordinates clutch and accelerator for smooth transition------- P F

Accelerates smoothly to 25 mph---------------------------------- P F

SEQUENCE 8 - Downshifting

Ascertain there is no following traffic then say to the person being examined:

"Now I want you to decelerate by downshifting as though you were going to turn at the next corner."

OBSERVE:

Removes foot from accelerator----------------------------------- P F

Depresses clutch-- P F

Increases engine speed by depressing accelerator slightly------ P F

Moves gearshift to lower gear----------------------------------- P F

Releases clutch gradually, and accelerates as necessary to prevent too rapid deceleration------------------------------ P F

Gradually reduces accelerator pressure until accelerator is all the way up--- P F

Waits until car slows to approximately 15 to 20 mph------------ P F

Applies accelerator pressure to avoid insufficient or excessive momentum-- P F

SEQUENCE 9 - Turning Right

Select uncontrolled intersection, ascertain there is no traffic immediately behind and say to the person being examined:

"Now I want you to prepare to turn right at the next intersection."

Then say:

"Go ahead and complete the turn."

OBSERVE:

Activates directional signal. No closer than 100 feet from intersection-- P F

Checks traffic to the left-------------------------------------- P F

Checks to the right for vehicles in intended lane-------------- P F

Positions car in far right lane so that it can clear the corner and fully remain within the intended lane--------------- P F

Keeps both hands on outside of steering wheel rim-------------- P F

Turns so as to avoid crossing center of lane yet not so sharply as to cause right rear wheel to cut corner------------- P F

Turns steering wheel in opposite direction at the proper time to round out smoothly------------------------------------ P F

Accelerates slightly during turn, but does not exceed 15 mph nor fall below 5 mph-- P F

FM

(MANUAL SHIFT)

If wheel is allowed to return by slipping, grasps outside of wheel slightly with palms-------------------- P F

SEQUENCE 10 - Turning Left

Select uncontrolled intersection, ascertain there is no traffic immediately behind and say to the person being examined:

"Now I want you to prepare to turn left at the next intersection."

Then say:

"Go ahead and complete the turn."

OBSERVE:

Activates directional signal. No closer than 100 feet from intersection-------------------------------------- P F

Checks traffic to the left------------------------------ P F

Checks blind spot-------------------------------------- P F

Positions car in far left lane-------------------------- P F

Keeps both hands on outside of steering wheel rim-------- P F

Does not cross center line until reaching the center of the intersection------------------------------------ P F

Turns into first lane to right of center line----------- P F

Turns steering wheel at the proper time to round out smoothly--- P F

If wheel is allowed to return by slipping, grasps outside of wheel slightly with palms-------------------- P F

SEQUENCE 11 - Rapid Stopping

Select appropriate stretch with no hidden entrances and no vehicles immediately behind, and say to the person being examined:

"Now when I say 'stop' I want you to give a hand signal and come to a stop as quickly as you can without skidding. Do it as you would on the road. All right, stop."

OBSERVE:

Places either right or left foot squarely on the brake pedal-- P F

Taps brake to flash brake light------------------------- P F

Applies brake in a series of pumping motions------------- P F

Depresses clutch just before strain is placed on gear---- P F

Eases brake pressure momentarily and then applies it firmly and evenly to bring car to a smooth stop------- P F

FM | (MANUAL SHIFT)

SEQUENCE 12 - Passing Gear

Say to the person being examined:

"Now I want you to accelerate to 25 mph and then put the car in passing gear when I tell you."

When speed reaches 25 mph say:

"All right, now."

OBSERVE:

Presses accelerator to the floor, and puts car in passing gear---------------------------------- P F

---------------------- -----------------------

SEQUENCE 13 - Starting on an Upgrade

Direct the person being examined to a sharp upgrade and bring the vehicle to a stop. Then say to the person being examined:

"Put the car in gear and start forward without rolling backward."

OBSERVE:

Sets parking brake--------------------------------- P F

Left foot on clutch-------------------------------- P F

Clutch depressed----------------------------------- P F

Gearshift in first--------------------------------- P F

Releases parking brake as clutch takes hold and avoids rolling backward---------------------------- P F

Coordinates clutch and accelerator to move away smoothly------------------------------------- P F

SEQUENCE 14 - Pulling to the Curb

Direct the person being examined to the point of origin. Then say:

"When I tell you to, I want you to pull over to the side of the street and stop. All right, now."

OBSERVE:

Signals right turn--------------------------------- P F

Gives hand signal to slow down--------------------- P F

Reduces speed to 10 mph, doesn't slow down excessively on the roadway------------------------ P F

Pulls to the edge of the roadway quickly, but smoothly------------------------------------- P F

Brings car to a quick smooth stop------------------ P F

Stops within 1 foot of the edge of the road-------- P F

Places shift in Neutral---------------------------- P F

Sets parking brake--------------------------------- P F

THE DRIVING FUNDAMENTALS TEST (MANUAL SHIFT)

SCORING SHEET

P F
P F
P F
P F

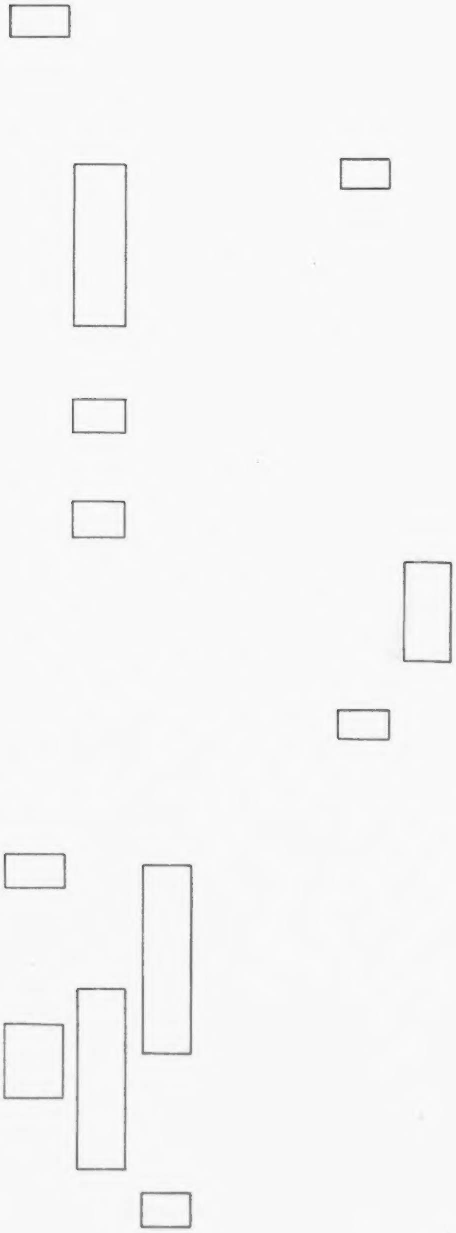
P F P F
P F
P F P F
P F
P F
P F
P F

P F P F
P F P F P F P F
P F P F
P F P F P F P F
P F P F P F P F
P F P F P F
P F P F
P F P F
P F
P F P F P F
P F
P F P F P F P F P F
P F P F
P F P F
P F P F P F
P F P F
P F
P F P F
P F P F P F P F

P F
P F
P F
P F
P F
P F P F
P F P F P F P F
P F
P F P F P F
P F
P F P F P F P F P F
P F P F
P F P F P F
P F P F P F P F P F
P F P F P F P F
P F P F P F
P F P F P F
P F P F P F P F P F P F
P F P F P F P F P F
P F P F
P F
P F P F P F

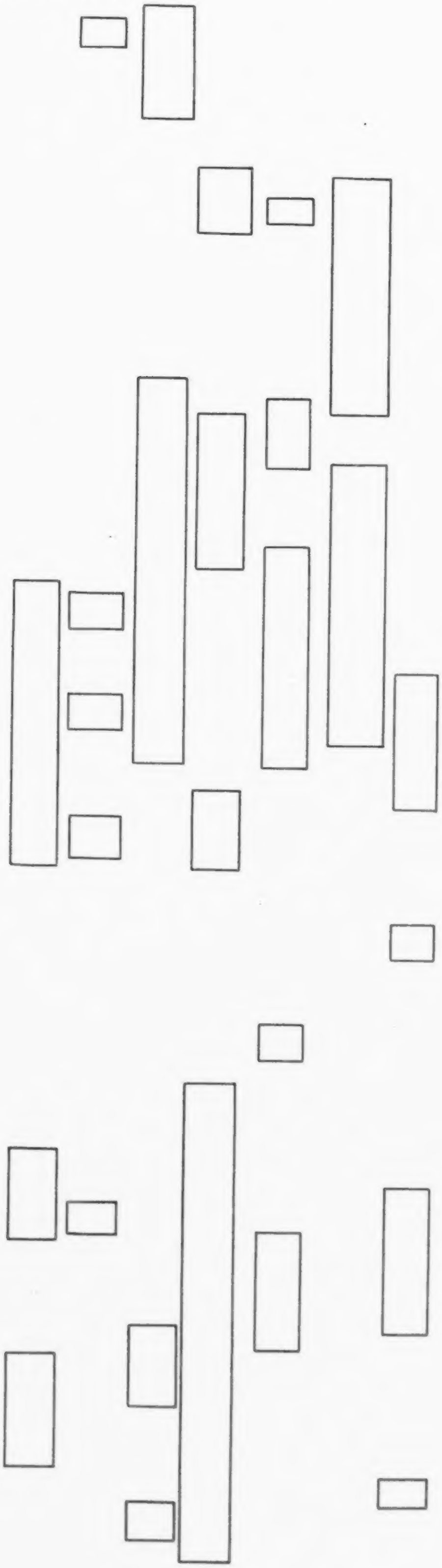
THE DRIVING FUNDAMENTALS TEST (MANUAL SHIFT) SCORING STENCIL

MODERATELY HIGH CRITICALITY ITEMS



THE DRIVING FUNDAMENTALS TEST (MANUAL SHIFT) SCORING STENCIL

MODERATE AND MODERATELY LOW CRITICALITY ITEMS



THE DRIVING FUNDAMENTALS TEST (MANUAL SHIFT) SCORING STENCIL

LOW CRITICALITY ITEMS

DRIVING SITUATIONS TEST

Instructions for the Administrator

This test is only as good as you are. All it does is to list a number of situations to which drivers must respond. It is your responsibility to spot these situations when they occur and to decide whether or not the student responds correctly. The only way you can do this effectively is to become *thoroughly familiar with the situations* that are identified.

Content

The test consists of two parts. The first part, labeled "Planned Situations," deals with those situations that you will be able to arrange. One group is concerned with the roadway and includes the situations Intersections, Hills, Curves, Freeways, Bridges or Tunnels, and Off-Street Areas. The other group consists of events that you will stage for the student and includes Passing, Emergency Planning, and Evasive Action.

The second part of the test, which appears when the booklet is turned upside down, is labeled "Unplanned Situations" and consists of situations that are beyond your control. They include Other Vehicles, Lane Changes, Pedestrians and Cyclists, Weather Conditions, Special Vehicles, Road Surface Conditions, and Traffic Signals and Signs. A summary of each part of this test follows these instructions.

Administration

Any time one of the situations occurs, you should record the student's response on the score sheet by placing a check in the block under "P" if you feel the student has passed, or in the column under "F" if you feel the student failed to perform properly. Where a situation is likely to occur more than once, additional blocks have been provided *above* the first block. It doesn't matter in which order the blocks are used as long as it is one of the blocks above the first block. You can even use two blocks on the same line if the student should pass on one occasion and fail on another.

The test will work best if you use the same route repeatedly. In this way you will know which planned situation is going to occur next. It is *not* necessary that you score each situation. In fact, situations often occur so close together that it is not possible to score them all. What is important is that you decide in advance which ones you will score. The following suggestions may help:

> Where situations occur frequently, as for example a series of intersections, pick those that are far enough from one another, and far enough from other things you are going to score, that you will have enough time to score one before encountering another.
>
> If several things happen more or less at once, make sure you pick the situation you will score *before* it is time for the student to respond. Otherwise you may tend to pick those on which the student has made a mistake.
>
> In the case of a situation that you will *stage* (Passing, Emergency Planning, Evasive Action), you should decide in advance just where you will stage it so that you can give the student adequate warning and so that you can determine in advance the best response the student can make. If for some reason you cannot stage the situation when the time comes, simply ignore it.

Two driving activities, car following and speed control, are continuous operations. You are to score the student's speed when and only when a *speed sign* (Traffic Signals and Signs) is passed and car following only when the *brake lights* (Other Vehicles—Slowing, Overtaken) light up on the car ahead. Score the student's responses in these situations only. If you score only when the student makes a mistake (e.g., drives too fast, or follows too closely) you will give a false impression of the student's performance.

SCORING

When you have completed the test, remove the score sheet from the back of the "Unplanned Situations" part and place it to the left of the "Planned Situations" score sheet. This will allow you to score both parts at one time.

Next, take the "*High Criticality*" scoring stencil and place it over the score sheets. Count the number of "passed" items and the number of "failed" items. Compute the percentage of items passed:

$$\text{percent passed} = \frac{\text{number passed}}{\text{number passed} + \text{number failed}}$$

Enter the result on the score sheet.

Repeat this process using the *Moderately High Criticality and the Moderate and Moderately Low Criticality* stencils. To pass the test the student should receive a score of at least 95% in the *High Criticality* block, 85% in the *Moderately High Criticality* block and 70% in the *Moderate and Moderately Low Criticality* block.

Driving Situations Test

Summary of Planned Situations

Situation	Nature of Observation	When Observation Performed
Emergency Planning		
Rear Vision	Student's use of mirror to check traffic behind	When followed closely by different types of vehicles
Collision Avoidance	Student's tendency to scan roadside when approached by an oncoming car	When approached by an oncoming car
Brake Failure	Student's tendency to scan the roadside for escape route when approaching an intersection	When approaching an intersection—may be preselected
Curves	Student's ability to enter, drive through, and leave curve safely	At moderate to sharp curves—may be preselected
Bridges or Tunnels	Student's ability to approach, enter, and exit a bridge or tunnel safely	Whenever the student approaches a bridge or tunnel—may be preselected
Passing		
Judgment—Oncoming Car	Student's ability to judge the passing distance of an oncoming car	When approaching an oncoming car visible for a long distance
Judgment—Roadway Restriction	Student's ability to judge passing distance to some roadway restriction	When passing distance is restricted by the roadway—may be preselected
Passing Restrictions	Student's knowledge of safe and unsafe passing zones	Safe and unsafe locations selected by administrator—may be preplanned
Passing Procedure	Student's ability to pass safely	Whenever initiated by student or administrator on any type of highway
Off-Street Areas	Student's ability to drive into, through, and out of an off-street area	A preselected off-street area
Evasive Action	Student's ability to leave the roadway, drive onto the shoulder, and return to the roadway safely	At a preselected location where the shoulder is firm enough to be driven on safely

(Continued)

Planned Situations *(Continued)*

Situation	Nature of Observation	When Observation Performed
Hills	Student's ability to drive up and down a hill safely and effectively	At a preselected steep hill
Freeways	Student's ability to enter, drive on, and exit a freeway safely	At a preselected, relatively short segment of expressway or limited-access highway entered or exited by means of a ramp or other oblique configuration
Entering and Leaving Traffic	Student's ability to enter and leave the flow of traffic safely	At the beginning and end of the road test
Intersection—Right Turn	Student's ability to approach and make a left turn at an intersection	At preselected controlled and uncontrolled intersections
Intersection—Proceeding Through	Student's ability to approach and drive through intersection safely	At preselected controlled and uncontrolled intersections
Intersection—Left Turn	Student's ability to approach and turn left at an intersection	At preselected controlled and uncontrolled intersections

Driving Situations Test

Summary of Unplanned Situations

Situation	Nature of Observation	When Observation Performed
Other Vehicles— Entering	Student's perception of vehicles entering the highway	Whenever vehicle approaches highway other than a scored intersection
Other Vehicles— Slowing, Overtaking		
Slowing	Student's attention and ability to react to cars ahead while following	Whenever the brake lights on the vehicle ahead indicate that it is slowing down
Vehicle Being Overtaken	Student's attention and ability to react to vehicles that are being overtaken	Whenever a slower vehicle is being overtaken
Other Vehicles— Parked		
Persons Alighting	Student's ability to anticipate and respond to persons alighting from a parked vehicle	Whenever a person alights from a parked vehicle
Car Pulling Out	Student's ability to anticipate and react to previously parked cars pulling out to enter traffic	Whenever a parked car pulls out to enter traffic
Pedestrians and Cyclists		
Pedestrians	Student's attention to and his ability to react safely to pedestrians	Whenever a pedestrian is close to, about to enter, or in the roadway
Cyclists	Student's ability to drive safely in the presence of cyclists	Whenever a mototcycle, scooter, or bicycle appears in front of the driver
Weather Conditions	Student's ability to react correctly to extreme weather conditions	Whenever confronted by (1) limitations in visibility caused by rain, sleet, snow, fog, sunglare, sand, or frost; (2) extreme temperature, (3) extreme wind
Special Vehicles	Student's ability to respond appropriately to special vehicles	Whenever student is confronted by a stopped bus, a school bus, or an emergency vehicle

(Continued)

Unplanned Situations *(Continued)*

Situation	Nature of Observation	When Observation Performed
Oncoming Cars	Student's ability to respond correctly to oncoming cars	When confronted by an oncoming car at preselected locations
Lane Changing	Student's ability to change lanes safely	Whenever a lane change is initiated by the student or administrator
Road Surface Conditions	Student's ability to identify and respond correctly to roadway irregularities or slippery conditions	Whenever an irregular or slippery surface is encountered (irregular surfaces may be preselected)
Traffic Signals and Signs	Student's observation of and ability to respond correctly to traffic signals and signs	Whenever a traffic signal or sign is encountered at an otherwise unscored location—can be preselected

PLANNED SITUATIONS

The following behaviors will be evaluated at appropriate places chosen by the administrator. However, the locations must be changed frequently to avoid alerting the student as to when the evaluation will be made

P F

REAR VISION

From time to time, cover the mirror and ask the student the following:

"What type of vehicle is behind you?"

- Score correct answer as "pass", incorrect answer as "fail" ---------- ☐ ☐

Situations should be chosen such that cars and other types of vehicles are following about equally often.

COLLISION AVOIDANCE

At some point in the test, say to the student:

"In a little while I will at some point say 'head-on-collision'. When I do, I want you to tell me immediately what path you would take in leaving the roadway if a car were really coming straight at you."

After some time has elapsed, pick a spot on a highway when the student is about to be passed by an on-coming car, where the risk of actual collision is highest and say:

"Head on collision"

- If the student selects the **best possible path,** score "pass". If less than the best, score "fail." Escape routes may be rank ordered as follows: Shoulder; field or lawn; shrubbery, small trees, embankment ---------- ☐ ☐

The following are always scored "fail."

A route that would cause collision with rigid object, tree, abutment.

Any move to the left.

BRAKE FAILURE

At some point in the test tell the student:

"In a short while I will at some point say 'brake failure'. When I do, I want you to tell me what you would do if your brakes failed completely."

After a short time pick a spot on a city street where the student is slowing down for an intersection and say:

"Brake failure"

- If the student selects the **best possible path,** score "pass". If not score "fail" ---------- ☐ ☐

EMERGENCY PLANNING

CURVES

BRIDGES OR TUNNELS

PASSING

OFF-STREET DRIVING

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F

The following behaviors are to be evaluated each time a curve is encountered

APPROACHING CURVES

IF SPEED LIMIT IS **POSTED:**

- Adheres to posted limit

IF SPEED LIMIT IS **NOT POSTED:**

- Enters curve at safe speed

IF PAVEMENT IS **WET OR ICY:**

- Enters at slower than normal speed

DRIVING THROUGH CURVES

- Maintains **proper position** in lane
- Maintains **proper velocity** through curve

IF INITIAL ENTERING SPEED WAS INAPPROPRIATE:

- Adjusts correctly

LEAVING CURVES

- Accelerates to original or **posted speed**

CURVES

BRIDGES OR TUNNELS

PASSING

OFF-STREET DRIVING

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F

The following behaviors are to be evaluated whenever a bridge or tunnel is encountered

APPROACHING

- Obeys speed limit
- Uses correct lane
- Turns on **headlights** before entering tunnel if required
- Removes **sunglasses** before entering tunnel

IF BRIDGE OR TUNNEL IS NARROW:

- Decelerates to safe speed
- **Stays to right** of lane to give clearance to traffic in adjacent lane

AFTER ENTERING

- Obeys all posted regulations
- Maintains safe speed
- Does not allow **grade** to cause increase or decrease in speed

EXITING

- Turns off **headlights** within a reasonable time
- **Resumes** or maintains appropriate **speed**

BRIDGES OR TUNNELS

PASSING

OFF-STREET DRIVING

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F P F

PASSING JUDGEMENT - ONCOMING CAR

Select a situation on a two lane road with a vehicle ahead traveling between 40-50 mph. As an oncoming car approaches, ask the student

> "Tell me when is the last moment of which you could safely start to pass the car ahead.[1] When you have reached the last moment say 'now'."

Time the interval between the time the student says "now" and the time the oncoming car arrives

- If **between 9 and 14 seconds** score "pass" if not score "fail" ------------------------------------

PASSING JUDGEMENT - ROADWAY RESTRICTIONS

Select a situation on a two lane road with a vehicle ahead traveling between 40 and 55 mph. As you approach a passing restriction—no passing zone, curve, hill—ask the student

> "Tell me when is the last moment at which you could pass the car ahead. When you've reached the last moment say, 'now'."

Time the interval between "now" and when you arrive at the beginning of the passing restriction

- If **between 9 and 14 seconds** score "pass". If not score "fail"------------------------------------

PASSING RESTRICTIONS

On several occasions when following a vehicle on a two lane road, ask the student:

> "Is it safe to pass here?"

At least once it should be safe to pass; at least once, passing should be restricted by one or more of the following. No passing zone; hill or curve; intersection; bridge or tunnel; traffic ahead signalling turn; car ahead is passing children, cyclist or animal; another car is already passing.

- If answer is **correct,** score "pass"; if not, score "fail" ------------------------------------

PASSING PROCEDURE

On one or more occasions when passing distance is not restricted, request that the student pass the vehicle ahead. May be performed on any roadway of 2 or more lanes. Evaluate the following:

PREPARATION

- Checks **rearview mirror** ------------------------------------
- Checks **side mirror** ------------------------------------
- Looks out **side window** moving head to see around blind spot ------------------------------------
- **Signals** at appropriate time (just before changing lanes) ------------------------------------

PASSING

- Changes lanes **smoothly** and quickly ------------------------------------
- Moves through **blind spot** quickly (doesn't "hang" in blind spot) ------------------------------------
- After passing, **signals** return to driving lane ------------------------------------
- **Returns to driving lane** as soon as possible without interferring with passed vehicle ------------

---

[1] If no situation develops in which there is a car ahead, have the student pretend there is one.

PASSING

OFF-STREET DRIVING

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F P F P F

The following behaviors will be evaluated by having the student drive into, through, and out of a shopping center or large off-street parking area

DRIVING INTO

- **Signals** turn into entrance at proper time
- Approaches entrance **slowly** enough for safe entry **without impeding** traffic flow unnecessarily

IF **SIGNS, SIGNALS,** OR **MARKINGS** ARE PROVIDED AT ENTRANCE:

- Obeys them

DRIVING THROUGH

- **Avoids stopping** after entering unless it it required
- Drives only in **travel aisles** in direction indicated by signs or markings
- Looks from **side to side** continuously for cars or pedestrians entering travel aisles

IF **VEHICLE OR PEDESTRIAN** ENTERS TRAVEL AISLE:

- **Stop or slows car** in a manner which indicates he has been alert to possible hazard

LEAVING

IF **SIGNS** OR **MARKINGS** PROVIDE FOR EXIT PROCEDURE:

- Obeys them

IF **NO SIGNALS** OR MARKINGS ARE PROVIDED AT EXIT POINT:

- Comes to a **full stop**
- Checks **cross traffic** right and left

IF THERE IS A **VEHICLE AHEAD:**

- **Waits** until vehicle has entered main roadway completely before starting to pull out, to avoid possibility of a rear-end collision

If cross traffic is present, complete the evaluation under "intersection", using the desired direction of travel, i.e., "right turn," "left turn," or "proceeding through." Begin evaluation with "at intersection"

OFF-STREET DRIVING

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

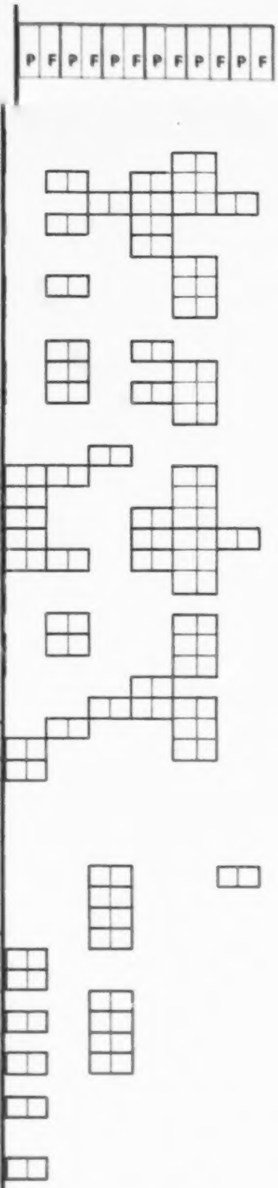
INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

These behaviors are to be evaluated only when local policy permits the instructor listing the student's ability to drive on shoulder under the conditions described

Selects a section of highway with a wide firm shoulder unobstructed by signs, vehicles, etc., and no traffic immediately following or approaching from the opposite direction



Say to the student,

"In just a moment I am going to ask you to take evasive action as though an oncoming vehicle were in your lane. When I say 'now', I want you to slow the car to 40 mph (depending upon condition of shoulder) as quickly as you can, then leave the roadway. Do you understand?"

When the student acknowledges that he understands and the appropriate conditions prevail, say,

"Now"

Evaluate the following

LEAVING ROADWAY

- **Pumps brakes** to decelerate
- **Slows** to specified velocity, ± 5 mph, before attempting to leave roadway
- **Turns wheels gradually** and edges off roadway
- **Releases brake** while crossing to shoulder
- **Straightens wheels** on shoulder

When student is completely on the shoulder say

"Now bring the car to a stop as quickly as you can safely do it."

Evaluate the following

ON SHOULDER

- **Pumps brakes** to slow down
- **Slows to** acceptable speed before applying brakes steadily; does not skid

After the car is stopped, say

"Now I want you to accelerate to 10 mph and re-enter the roadway."

Evaluate the following

RETURNING TO ROADWAY

- **Accelerate** to approximately 10 mph
- **Signals Turn** onto roadway at proper time
- **Checks** for traffic to the rear by looking over shoulder, and using rearview mirrors
- **Turns** sharply enough to avoid catching tires on edge of pavement, yet gradually enough to maintain control
- **Positions car** properly in lane, does not allow any portion of the car to protrude onto the far lane

IF DIRECTIONAL SIGNAL **FAILS TO CANCEL**

- **Cancels by hand** in a reasonable amount of time

EVASIVE ACTION

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F P F P F P F P F

The following behaviors will be evaluated whenever a hill is enc ed

UPGRADE

- **Accelerates** to attain appropriate speed for starting up hill
- **Maintains** acceptable speed on upgrade

IF ENGINE BEGINS TO **LUG:**

  - Downshifts

IF CAR IS **MOVING** MORE **SLOWLY** THAN TRAFFIC FLOW

  - Enters far **right lane** (lane changing)

- **Eases off on accelerator** near crest of hill to avoid excess speed

DOWNGRADE

- **Tests brakes** before beginning steep downgrade
- **Slows to** acceptable speed before beginning downgrade

IF DOWNGRADE IS EXTREMELY **STEEP** OR SURFACE IS **SLIPPERY** ENOUGH TO WARRANT:

  - **DOWNSHIFTS**
    - Revs engine as required (manual shift)
    - Coordinates clutch and manual shift
    - Regulates speed correctly
  - **Checks rearview mirror** (to see if any following vehicles are closing rapidly)
  - **Maintains proper speed** going downhill
  - At the bottom of the hill, **shifts back** into normal driving gear if necessary
  - **Accelerates** to normal driving speed

HILLS

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F P F P F P F P F P F

The following behaviors are to be evaluated

ON-RAMPS

- Looks **over shoulder** for traffic on main roadway

IF **TRAFFIC** IS PRESENT
  - Selects **gap of sufficient size** to permit merging without interrupting traffic flow
  - **Accelerates to** highway speed before merging

IF IT IS NECESSARY TO **WAIT FOR A GAP:**
  - **Slows or stops early** on the ramp so he can accelerate and merge safely
  - **Avoids** slowing or stopping at the **end of the ramp**

- **Signals** intention to merge at proper time (e.g., when alongside lead vehicle at gap)
- **Enters roadway as soon** as it is safe to do so, uses no more of acceleration lane than is necessary
- **Stays within border** of pavement markings dividing ramp from roadway
- Makes **smooth, quick merge** into adjacent lane

IF DIRECTIONAL **SIGNAL FAILS TO CANCEL:**
  - **Cancels manually** within reasonable time

DRIVING ON FREEWAY

Advise student as to which exit to take in which direction and evaluate the following

- **Maintains** posted **speed**
- **Keeps to the right** where possible

IF IT IS NECESSARY TO **PASS SLOWER VEHICLE:**
  - Does so **on the left**

OFF-RAMPS

- Enters **correct lane** for exit at proper time (lane changing)
- **Maintains speed** while on main roadway, if length of off ramp permits
- Signals intention to exit
- **Enters off-ramp** as **soon** as possible
- **Maintains position** in center of lane
- **Slows** to posted or safe speed

IF PART OF **OFF-RAMP IS SHARED** WITH ON RAMP AND OTHER VEHICLES ARE PRESENT
  - **Slows down** as necessary to allow adequate safety margin

- **Selects correct lane** and speed for entry to main roadway
- Corrects **directional signal** manually, if necessary.
- Assumes at **posted speed**

FREEWAYS

ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F

These behaviors will be evaluated when the student first takes the wheel. The administrator may, at his discretion, require a student to leave traffic and re-enter for additional evaluation

ENTERING TRAFFIC

- Buckles **seatbelt** ______
- Looks at **rearview mirror** and looks over shoulder to check traffic ______
- **Selects gap** that will allow entry without disrupting flow of traffic ______
- Activates **turn signal** at proper time (as lead car passes) ______
- **Accelerates smoothly** into adjacent traffic lane ______
- **Properly positions** car in lane; does not allow any portion of the car to protrude into far lane ______

IF DIRECTIONAL **SIGNAL FAILS TO CANCEL:**

  - **Cancels manually** within a reasonable time ______
  - Accelerates to **speed of traffic** ______

LEAVING TRAFFIC

These behaviors will be evaluated at the end of the test when the student leaves traffic. The administrator may at his discretion require a student to re-enter traffic and leave traffic for additional evaluation

- Selects a **suitable place** to leave traffic ______
  - Wide and long enough to accommodate car without obstructing traffic ______
  - Legally permissible ______
  - Capable of being seen at least 200 ft. behind ______
- **Signals** intention at appropriate time ______
- **Slows** to safe speed, with minimum disruption to traffic ______

IF FOLLOWED CLOSELY

  - **Taps brake** pedal lightly to activate brake lights ______
  - **Pulls smoothly off** traveled portion of roadway ______
  - Comes to **smooth stop** ______
  - Car is **completely off** traveled portion of roadway ______

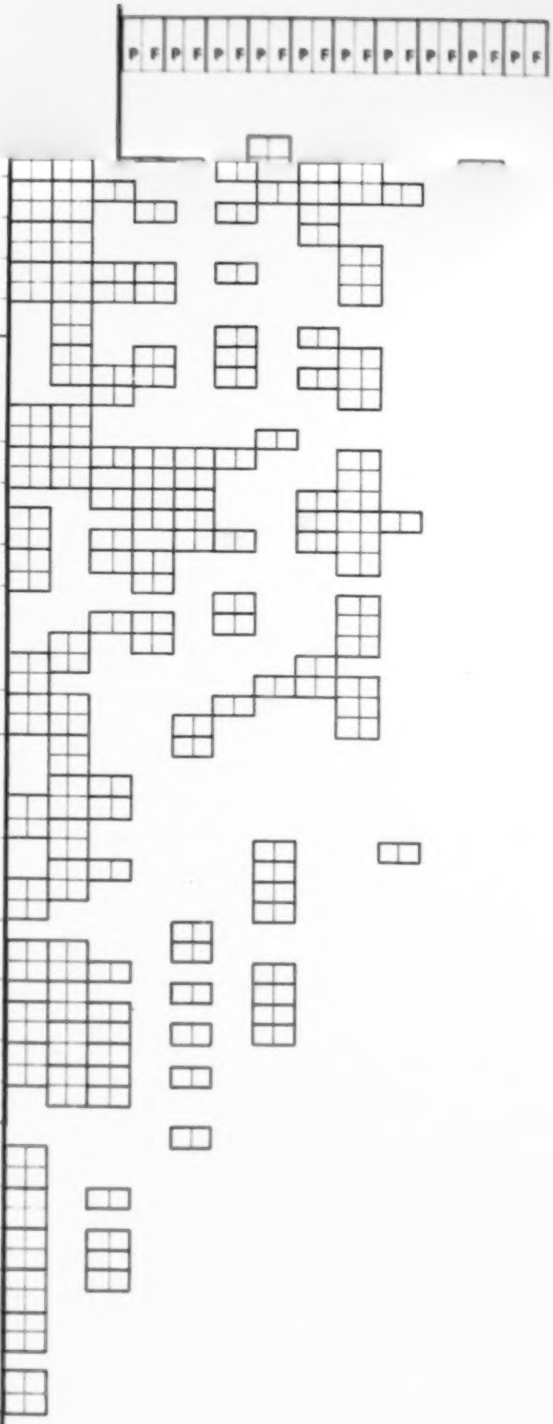
ENTERING AND LEAVING TRAFFIC

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

The following behaviors are to be evaluated when making a right turn at an intersection



APPROACHING INTERSECTION

to traffic and road surface conditions

- Enters **right lane** for turn at the proper time (lane changing)
- **Signals** turn at proper time (where not confusing and at least 100 ft. from intersection)
- Uses **hand signal if necessary** (heavy traffic, or glare obscures directional signal)

AT INTERSECTION

IF REQUIRED TO STOP

- Makes a **smooth stop** using technique appropriate to road surface conditions
- Stops **before reaching crosswalk** or path of pedestrians (if lead car)

- **Obeys** traffic **signals** (e.g., green arrow, right turn permitted)
- **Keeps foot on brake** while waiting for cross traffic

IF **ONCOMING TRAFFIC**

- **Yields to left turning vehicle** as required for safety

- **OBSERVES** TRAFFIC FROM LEFT (EVEN AT CONTROLLED INTERSECTION)

IF THERE IS **TRAFFIC FROM LEFT:**

- Begins turn only when there is a **sufficient gap** in cross traffic to permit turn without interrupting traffic flow

IF APPROACHING VEHICLES ARE **INDICATING A TURN:**

- **Waits** until they have committed themselves before beginning a turn

IF **LANE AHEAD IS BLOCKED** BY TRAFFIC

- Does not begin turn

IF **PEDESTRIANS** ARE IN OR NEAR INTERSECTION

- **Observes** pedestrians
- Exercises **caution** (yields right of way or reduces speed as required)

MAKING TURN

- Begins turn at **proper point**
- **Enters right hand transit lane**
- **Avoids encroaching** upon left lane
- Avoids turning **too sharply** (e.g., striking curb)
- Maintains **proper speed** (5-15 mph)

IF DIRECTIONAL **SIGNAL FAILS** TO CANCEL

- **Cancels by hand** within a reasonable time

INTERSECTION – RIGHT TURN

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

332

P F P F P F P F P F P F P F P F P F P F P F

The following behaviors are to be evaluated when proceeding through an intersection

APPROACHING INTERSECTION

- Begins to **slow down** at a point appropriate to traffic and road surface conditions ______________
- Enters correct lane for intersection (lane changing) ______________

AT INTERSECTION

IF REQUIRED TO **STOP**:
- Makes **smooth stop** using technique appropriate to road surface conditions ______
- Halts **before** reaching **crosswalk** or path of pedestrians (if lead car) ________

IF **TRAFFIC SIGNALS** ARE PROVIDED:
- Obeys them (e.g., green arrow, flashing red) ______________
- Observes traffic from left (even at controlled intersections) ______________

IF THERE IS **CROSS TRAFFIC**:
- Proceeds only when intersection may be traversed **without interrupting cross traffic** ___

IF TRAFFIC PERMITS MOVING **HALFWAY** ACROSS INTERSECTION
- Proceeds only when and where it cannot interrupt traffic from the left ______________

IF ONCOMING TRAFFIC IS PRESENT AND **ONCOMING VEHICLE** IS **TURNING LEFT**:
- **Slows or stops** with ample safety margin _____

IF **PATH** OF ONCOMING, LEFT-TURNING VEHICLE IS **BLOCKED** (CARS OR PEDESTRIANS)
- Comes to a **stop** ______________

IF ONCOMING VEHICLE IS **SIGNALLING LEFT** TURN
- Proceeds with **caution** (e.g., reduces speed, covers brake, observes vehicle) ______

IF **PEDESTRIANS** ARE IN OR NEAR INTERSECTION
- **Observes** pedestrians ______________
- Exercises **caution** (e.g., reduces speed or stops as appropriate) ______________

IF **LANE** BEYOND INTERSECTION IS **BLOCKED**:
- Does **not enter** intersection ______________

INTERSECTION – PROCEEDING THROUGH

INTERSECTION – LEFT TURN

P F P F P F P F P F P F P F P F P F P F P F P F P F

The following behaviors are to be evaluated when making a left turn at an intersection

APPROACHING INTERSECTION

- Begins to **slow down** at a point appropriate to traffic and road surface conditions ________
- Enters **left lane** at proper time (lane changing) ________
- **Signals** at proper time ________

AT INTERSECTION

If required to stop

- Makes a **smooth stop** using technique appropriate to road surface conditions ________
- Stops **before** reaching **crosswalk** or path of pedestrians (if lead car) ________
- **OBSERVES TRAFFIC FROM LEFT** (EVEN AT CONTROLLED INTERSECTION) ________
- **OBSERVES TRAFFIC FROM RIGHT** (EVEN AT CONTROLLED INTERSECTION) ________

IF TRAFFIC SIGNALS (E.G., GREEN ARROW, DELAYED GREEN, ADVANCED GREEN) ARE PROVIDED

- Obeys them ________

ENTERS INTERSECTION

IF THERE IS **CROSS TRAFFIC:**

- **Begins turn** only when it can be completed **without interrupting** traffic from right or left and on-coming traffic ________

IF TRAFFIC PERMITS MOVING **HALF-WAY** ACROSS INTERSECTION

- Does so only when and where it **can not interrupt** traffic from the left ________

WHEN **ON-COMING TRAFFIC** IS PRESENT

- Pulls into intersection ________
- **Remains right** of center line ________
- Keeps **wheels** pointed **straight ahead** ________
- Keeps **foot on brake** ________
- Waits for **sufficient gap** to permit turn without interrupting on-coming traffic ________

IF INTENDED **LANE IS BLOCKED** BY OTHER VEHICLES

- **Does not begin** turn until it is clear ________

IF ON-COMING VEHICLES HAVE **INDICATED A TURN:**

- **Waits** until they have committed themselves before beginning turn ________

IF **PEDESTRIANS** ARE IN OR NEAR INTERSECTION

- **Observes pedestrians** ________
- Does not begin turn (that would cause stop in path of on-coming cars) ________

MAKING THE TURN

- Begins turn at **proper point** ________
- **Turns into left-most** transit lane ________

IF DIRECTIONAL SIGNAL FAILS TO CANCEL

- Cancels manually within a reasonable time ________

INTERSECTION – LEFT TURN

UNPLANNED SITUATIONS

The following behaviors will be evaluated when other traffic is entering the highway

P	F

ACCESS ROADS (SIDE STREETS, DRIVEWAYS)

- As the vehicle **approaches,** exercises caution (slows, covers brake) ☐☐
- If vehicle **stops,** continues without reducing speed ☐☐
- If vehicle **enters,** reduces speed as necessary to maintain adequate following distance ☐☐

MERGE POINTS (ON-RAMPS, Y-INTERSECTIONS)

- If gap is **adequate,** maintains speed ☐☐
- IF GAP IS **NOT ADEQUATE**
  - Changes lanes, if possible, to accommodate entering vehicle ☐☐

  IF LANE CHANGE IS NOT POSSIBLE
    - Exercises caution (slows, covers brake) ☐☐
    - If vehicle enters, reduces speed as necessary to maintain adequate following distance ☐☐

VEHICLES – ENTERING

OTHER VEHICLES – SLOWING, OVERTAKEN

OTHER VEHICLES – PARKED

PEDESTRIANS AND CYCLISTS

WEATHER CONDITIONS

SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

P F P F

VEHICLE SLOWING

The following behaviors are to be evaluated each time the brake lights on a vehicle ahead light up

AT THE TIME THE LIGHTS WENT ON:

- The student was **maintaining adequate following distance** for (1) weather and pavement conditions, and (2) the type of vehicle, e.g., added following distance for trucks, cyclists or frequently stopping vehicles, emergency vehicles (500 feet) ____

IF THE VEHICLE AHEAD (1) HAD **INDICATED A TURN,** OR (2) WAS **APPROACHING AN INTERSECTION,** OBSTACLE, OR **TRAFFIC STOPPED** AHEAD

- **Slowed** down in advance ____

AFTER THE BRAKE LIGHTS LIT UP:

- **Responded immediately** by removing foot from accelerator or braking as appropriate ____

IF FOLLOWED CLOSELY BY OTHER VEHICLES:

- **Tapped or pumped brake** pedal as a warning ____

VEHICLE BEING OVERTAKEN

The following behaviors are to be evaluated anytime the student overtakes a car ahead

- Begins to slow down or initiate pass at the **proper time** ____

IF THE VEHICLE AHEAD WAS A (1) **FARM** VEHICLE, (2) **TRACTOR,** (3) **TRUCK** OR UNDERPOWERED VEHICLE **ON A HILL,** OR (4) OTHER **SLOW MOVING** TYPE:

- Reacts early ____

IF VEHICLE AHEAD IS **STOPPED,** STOPS OR PASSES CORRECTLY:

- Stops or slows **before reaching vehicle** to allow pass to be made ____

- Checks **pedestrian** and **vehicle traffic** before passing ____

OTHER VEHICLES – SLOWING, OVERTAKEN

OTHER VEHICLES – PARKED

PEDESTRIANS AND CYCLISTS

WEATHER CONDITIONS

SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

343

P	F	P	F	P	F

PERSONS ALIGHTING

The following behaviors should be evaluated anytime a person emerges from a vehicle on the street side

- Was driving at appropriate speed for passing parked cars ____________

IF THE PERSON'S ALIGHTING COULD HAVE BEEN **ANTICIPATED** (DOOR OPENING, HOOD UP):

- Exercised proper **caution,** i.e., sounded horn, slowed down, steered away, covered brake ____________

WHEN PERSON ALIGHTED:

- **Responded immediately** by slowing down, stopping, steering, as appropriate ____________

IF FOLLOWED BY OTHER VEHICLES:

- Gives appropriate **signal** to alert other drivers ____________

CAR PULLING OUT

The following behaviors are to be evaluated each time a parked car starts to pull out in front of the student

- Was driving at **appropriate speed** for passing parked cars ____________

IF MOVEMENT OF PARKED CAR COULD HAVE BEEN **ANTICIPATED** (PERSON IN DRIVER'S SEAT, EXHAUST, WHEELS TURNED):

- Exercised proper **caution,** i.e., sounded horn, slowed down steered away, covered brake ____________

WHEN CAR PULLED OUT:

- **Responded appropriately,** i.e., slowed down, stops or changes lanes as appropriate ____________

IF FOLLOWED:

- Gives appropriate signal to vehicles behind ____________

OTHER VEHICLES – PARKED

PEDESTRIANS AND CYCLISTS

WEATHER CONDITIONS

SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

P F P F P F P F

The following behaviors are to be evaluated anytime the situation indicated arises

PEDESTRIANS

IF PEDESTRIANS ARE **CLOSE TO THE EDGE** OF THE HIGHWAY:

- Exercises **caution** (i.e., reduces speed, covers brake, watches pedestrians) ______

IF PEDESTRIANS ARE **ABOUT TO ENTER** THE ROADWAY, **RUNNING ALONGSIDE** OR **CLOSE** TO THE ROADWAY:

- Applies **brake** to slow down ______
- **Watches** pedestrians closely ______

IF CHILDREN ARE **PLAYING** NEAR OR **WALKING** ALONG THE EDGE OF THE ROADWAY:

- Applies **brake** to slow down ______
- **Watches** children closely ______

IF PEDESTRIANS ARE APPROACHING THE ROADWAY WITH VISIBILITY HAMPERED BY **UMBRELLAS** OR **PACKAGES**:

- Applies **brake** to slow down ______
- **Watches** pedestrians closely ______

IF PEDESTRIANS ARE **WALKING IN THE ROADWAY**:

- **Steers** as far **away** from them as possible ______
- Exercises **caution** (i.e., slows down, covers brake, watches pedestrians) ______

IF PEDESTRIANS **ENTER** THE ROADWAY IN THE PATH OF THE CAR:

- Sounds **horn** ______
- **Steers away** ______
- Applies **brake** to stop without skidding ______

IF **PUDDLES** ARE NEAR PEDESTRIANS:

- **Avoids** driving through them at a speed that would cause **splashing** ______

CYCLISTS (MOTORCYCLES, SCOOTERS, BICYCLES)

IF A CYCLIST APPEARS IN FRONT OF THE DRIVER:

- Drops back to a **greater** than normal **following distance,** to allow for the ability of the cyclist to stop quickly ______
- Before passing a cyclist, sounds **horn** ______
- When passing a cyclist, allows as much **lateral clearance** as possible ______

PEDESTRIANS AND CYCLISTS

WEATHER CONDITIONS

SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

P F P F P F P F P F

The following behaviors are to be evaluated anytime the situation indicated arises

IF **VISIBILITY** BECOMES **LIMITED** BY RAIN, SLEET, SNOW, HAIL, FOG, SUNGLARE, OR BLOWING SAND:
- Reduces speed ______

IF **FOLLOWING** OTHER VEHICLES:
- **Increases following distance** compensating for decreased viewing distance ______

IF WINDSHIELD BECOMES OBSCURED BY **PRECIPITATION** OR **ROADSPRAY**:
- Turns windshield **wipers** on ______
- Adjusts wiper **rate** to amount of rainfall or spray ______

IF WINDSHIELD BECOMES OBSCURED BY **FROST, ICE** OR CONDENSATION FORMED FROM OCCUPANT'S **BREATH**:
- Turns on defroster ______
- **Adjusts temperature** to "warm" during cold weather, "cold" during mild weather, or "cold" in air conditioned cars during warm weather ______

IF VISIBILITY BECOMES REDUCED DURING EITHER DAY OR NIGHT BY **FOG** OR **PRECIPITATION**:
- Turns on **low beam** headlights ______
- **Reduces speed** to account for reduced sight distance ______

IF CONDITION IS SEVERE:
- **Pulls off road** and stops ______
- **Proceeds** when visibility returns to safe distance ______

IF **SUNGLARE** BECOMES BLINDING:
- Adjusts sunvisors ______
- Puts on sunglasses ______

IF THE **TEMPERATURE** BECOMES EXTREMELY HIGH:
- Turns on air conditioner ______
- Reduces speed to avoid engine overheating and tire failure ______

IF **STOPPED** AND PREPARING TO LEAVE CAR AFTER DRIVING ON **HOT DAY**
- Allows engine to **idle** 2-3 minutes before turning off ignition to prevent vapor lock ______

IF **WINDS** BECOME SEVERE:
- **Reduces speed** to safer rate ______
- **Steers to compensate** for wind gusts, not permitting car to be moved laterally into adjacent lanes or off roadway ______

WEATHER CONDITIONS

SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

BUS

The following behaviors are to be evaluated whenever a stopped bus is approached from behind

- Reduces speed
- **Looks to both sides** for pedestrians approaching bus

IF PEDESTRIAN APPROACHES PATH OF CAR:

- Slows or stops as appropriate

SCHOOL BUS

The following behaviors are to be evaluated whenever a school bus stops directly ahead or in an oncoming lane where law requires cars to halt

IF **WARNING SIGNALS** WERE VISIBLE BEFORE BUS STOPPED:

- Responded by slowing down
- Came to a **stop** at an appropriate place
- **Remained stopped** until signals were de-activated and school bus proceeded

IF **CHILDREN** REMAINED IN OR NEAR ROADWAY:

- Exercised proper **caution**

EMERGENCY VEHICLE

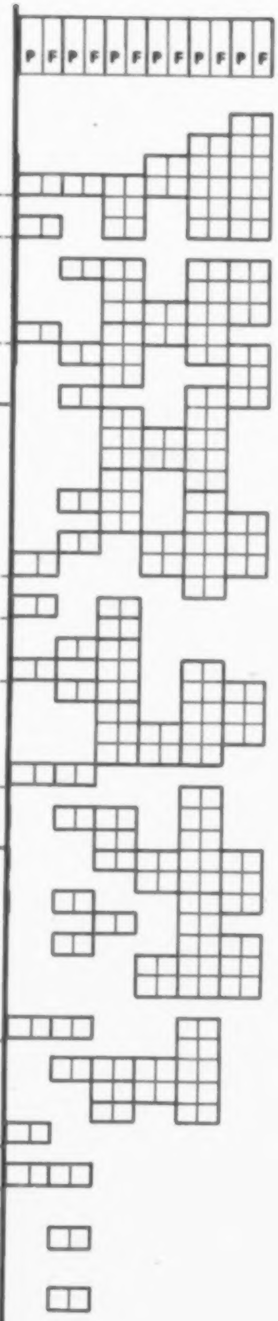
The following behaviors are to be evaluated anytime an emergency vehicle (ambulance, police car, fire truck) is detected

IF **SIREN** IS HEARD BEFORE EMERGENCY VEHICLE IS VISIBLE:

- **Attempts to hear better** by stopping conversation, opening window, slowing down

ONCE EMERGENCY VEHICLE IS LOCATED AND **STOP** IS **REQUIRED**:

- Pulls quickly to the **side of the road**
- **Stops** where path of emergency vehicle will not be blocked



SPECIAL VEHICLES: BUS, SCHOOL BUS, EMERGENCY VEHICLE

ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

The following behaviors should be evaluated at least three times during the test

WHEN ON-COMING VEHICLE **APPROACHES**

- Keeps to right of center line ____________________

- Maintains maximum lane separation ____________________

WHENEVER ONCOMING VEHICLE **MAY CROSS CENTER LINE** AS INDICATED BY ONE OF THE FOLLOWING

SIGNALLING TO TURN

TAILGATING OR OVERTAKING (ABOUT TO PASS)

DRIFTING

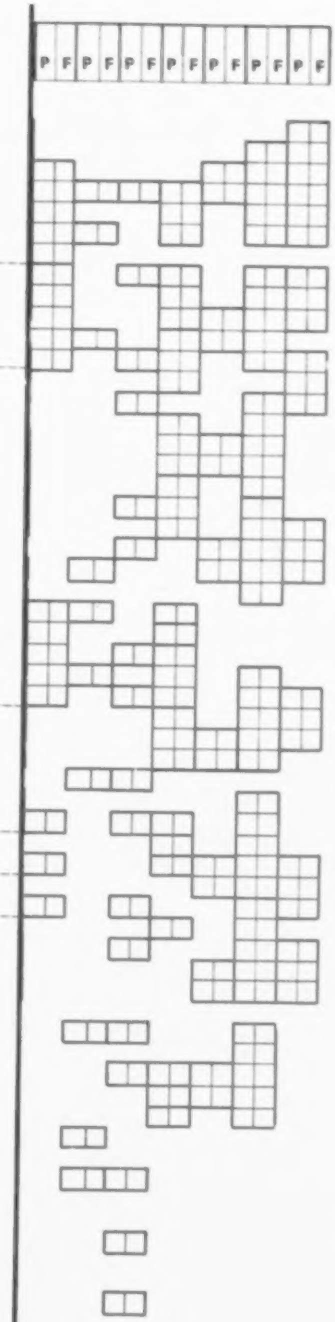
MERGING TRAFFIC (FROM FAR LANE)

ROAD CONDITION (e.g., pothole)

- Removes foot from accelerator, covers brake and increases surveillance ____________________

IF ANY PORTION OF THE ONCOMING VEHICLE **CROSSES** THE **CENTER** LINE:

- Reduces speed by braking ____________________
- Moves to right ____________________
- Pulls partially off road if necessary (leaving traffic) ____________________



ONCOMING CARS

LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

The following behaviors should be evaluated whenever a lane chan e is necessary

BEFORE CHANGING LANES

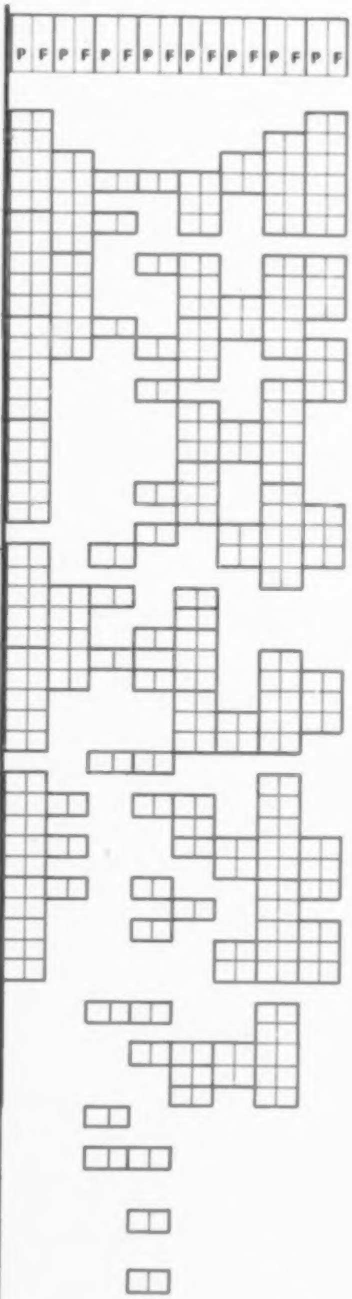
- Changes lane only when **legally permissible**
- **Checks** mirrors, looks out side window.
- **Signals** intention to change lane by using directional or hand signal
- **Waits** a few seconds after beginning signal before begin ning lane change

CHANGING LANES

- **Steers smoothly** into new lane
- **Positions car** in center of new lane

If necessary:

- **Cancels** directional **signal** within a reasonable ime
- **Adjusts speed** to traffic flow in new lane



LANE CHANGING

ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

The following behaviors should be evaluated anytime the situation indicated arises

ROADWAY IRREGULARITIES (BUMPS, POTHOLES, RUTS, GRAVEL ROADS)

- **Slows down** to appropriate speed as soon as any irregularity appears ____________________
- **Drives around** or straddles it if possible ____________________
- **Does not brake** or **accelerate** while driving over irregularity ____________________

LARGE PUDDLES

- Slows down in advance ____________________
- Avoids splashing pedestrians ____________________
- **Tests brakes** after proceeding through puddle ____________________

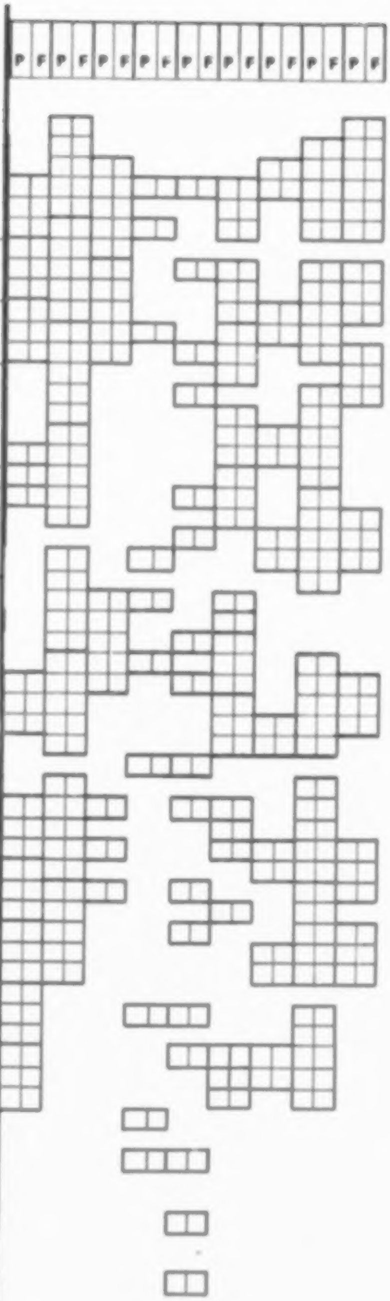
WET, ICY, OR SNOW-COVERED PATCHES

Note: Student response to generally wet, or icy roads is evaluated as a part of a specific situation, e.g., "intersections," "speed signs," "following car ahead," "curves."

- **Avoids** driving through wet, icy or snow-covered patches if possible ____________________

IF NOT POSSIBLE

- Slows down in advance ____________________
- Avoids braking on ice ____________________
- Pumps brake to avoid locked-wheel skid ____________________
- Minimizes turning ____________________
- Turns gradually ____________________



ROAD SURFACE CONDITIONS

TRAFFIC SIGNALS AND SIGNS

The following behaviors are to be evaluated each time a sign or signal is encountered, other than those scored at intersections

LIGHTS

RED LIGHT (Including Flashing)

- Comes to safe, comfortable stop ______________

GREEN LIGHT

- Checks all cross traffic ____________________

IF CROSS TRAFFIC APPROACHES INTERSECTION:

- Proceeds with caution (reduces speed, covers brake, observes vehicles) __________

YELLOW LIGHT

- Stops if it can be done safely; otherwise proceeds _____________________

FLASHING YELLOW LIGHT

- Reduces speed ______________________________

IF **CROSS TRAFFIC** APPROACHING INTERSECTION:

- Exercises caution (reduce speed further, covers brake, observes vehicles) __________

SIGNS

YIELD SIGN

- Reduces speed ________________________________
- Looks for traffic on main roadway ______________

STOP SIGN

- Comes to complete stop _______________________
- Looks for traffic on main roadway ________________

SPEED SIGN

- Responds correctly in a reasonable time _________
- Drives at lower than posted speed when wet or icy pavement warrants _______________

CAUTIONARY SIGNS (e.g., School Zone, Men Working)

- Reduces speed appropriately in a reasonable time ____

RAILROAD CROSSING SIGN

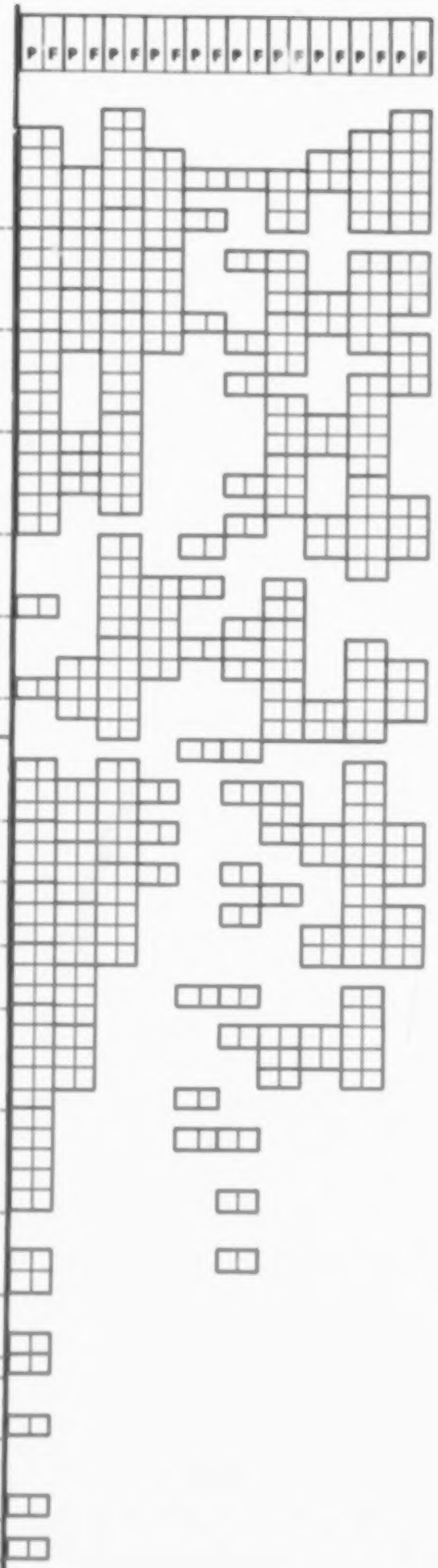
- Reduces speed (even if no signal) ______________
- Looks for train (even if no signal) ______________

IF TRAIN IS VISIBLE AND A SIGNAL IS FLASHING:

- Stops ____

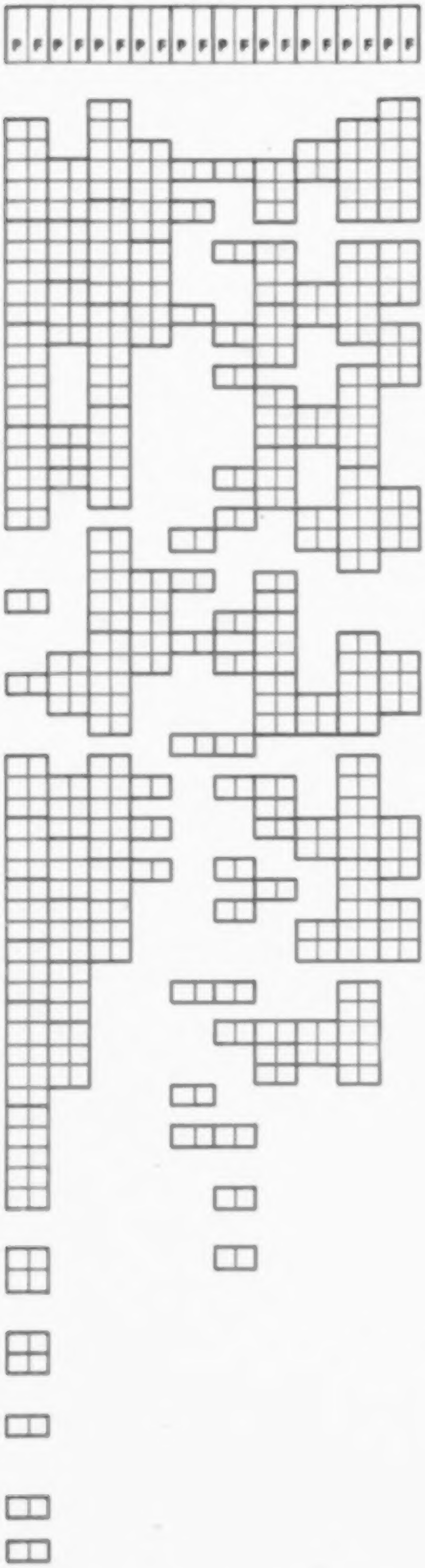
IF TRAIN HAS PASSED:

- **Waits** until signals stop and tracks are clear in both directions _______________
- Proceeds across track **without stopping** or **shifting gears** ____________________________

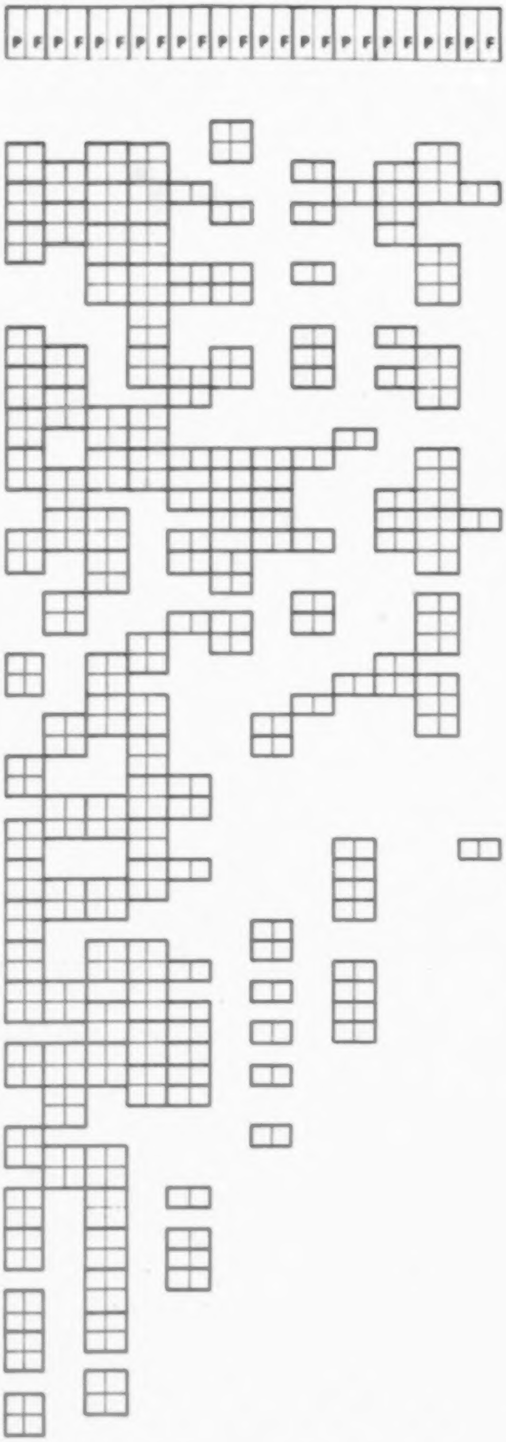


TRAFFIC SIGNALS AND SIGNS

Unplanned

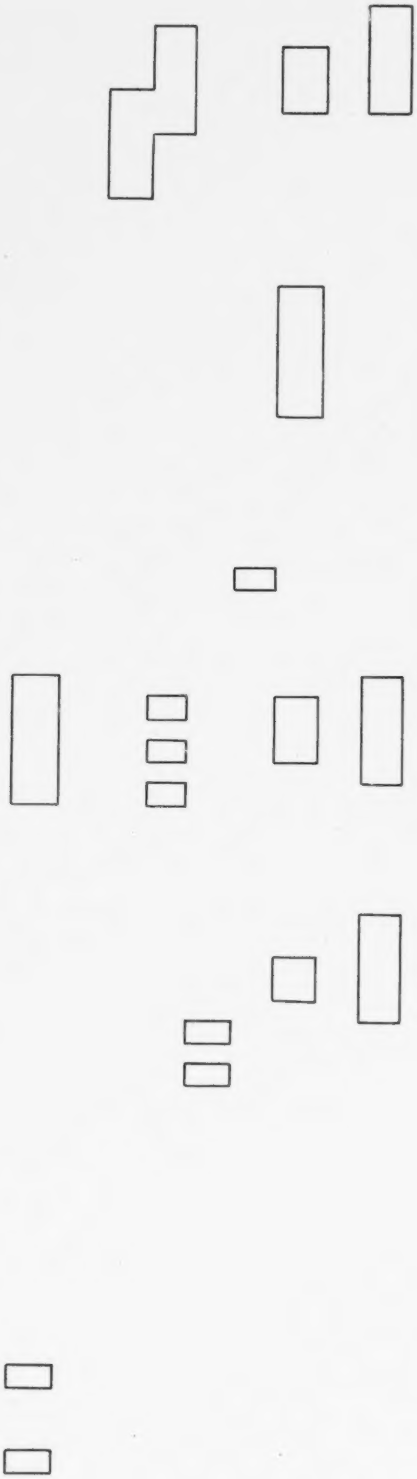

P F P F P F P F P F P F P F P F P F P F

Planned


P F P F P F P F P F P F P F P F P F P F P F P F

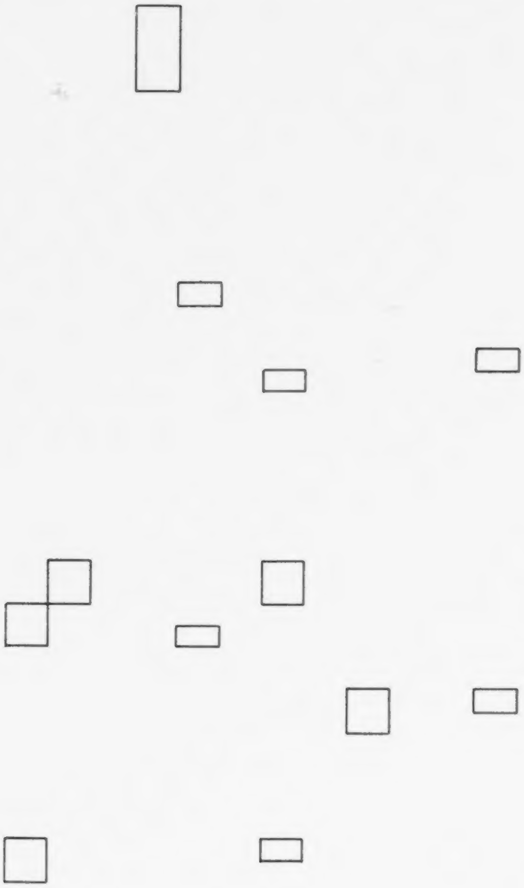
THE DRIVING SITUATIONS TEST SCORING STENCIL

UNPLANNED SITUATIONS HIGH CRITICALITY ITEMS



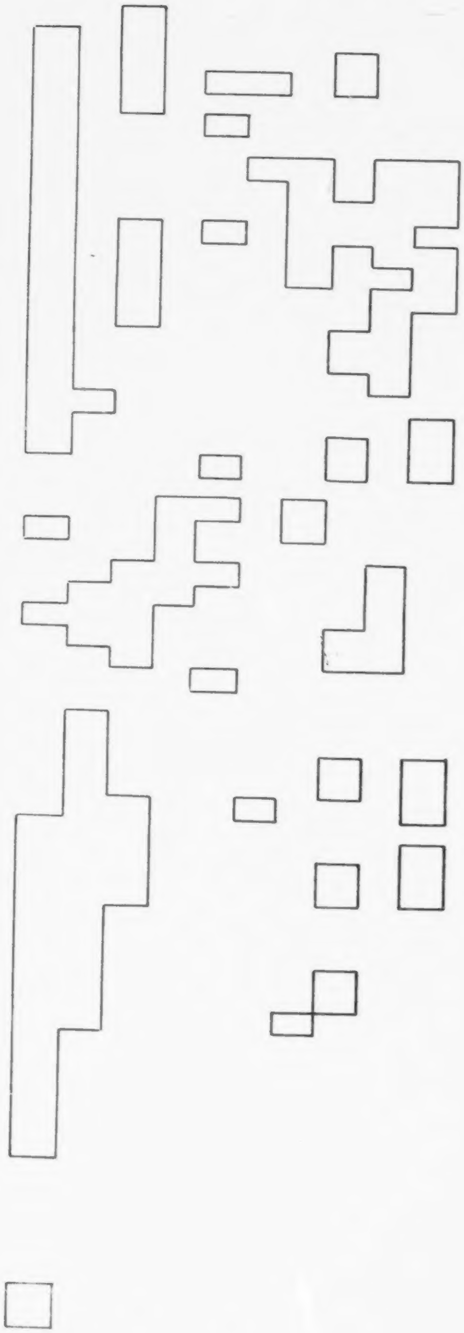
THE DRIVING SITUATIONS TEST SCORING STENCIL

PLANNED SITUATIONS HIGH CRITICALITY ITEMS



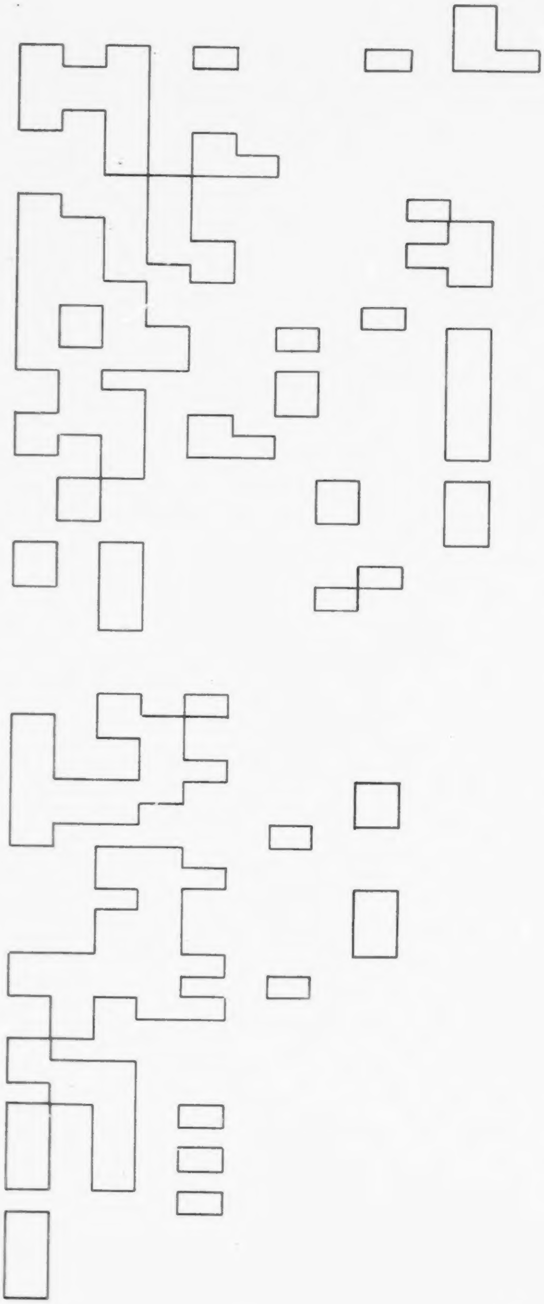
THE DRIVING SITUATIONS TEST SCORING STENCIL

UNPLANNED SITUATIONS MODERATELY HIGH CRITICALITY ITEMS



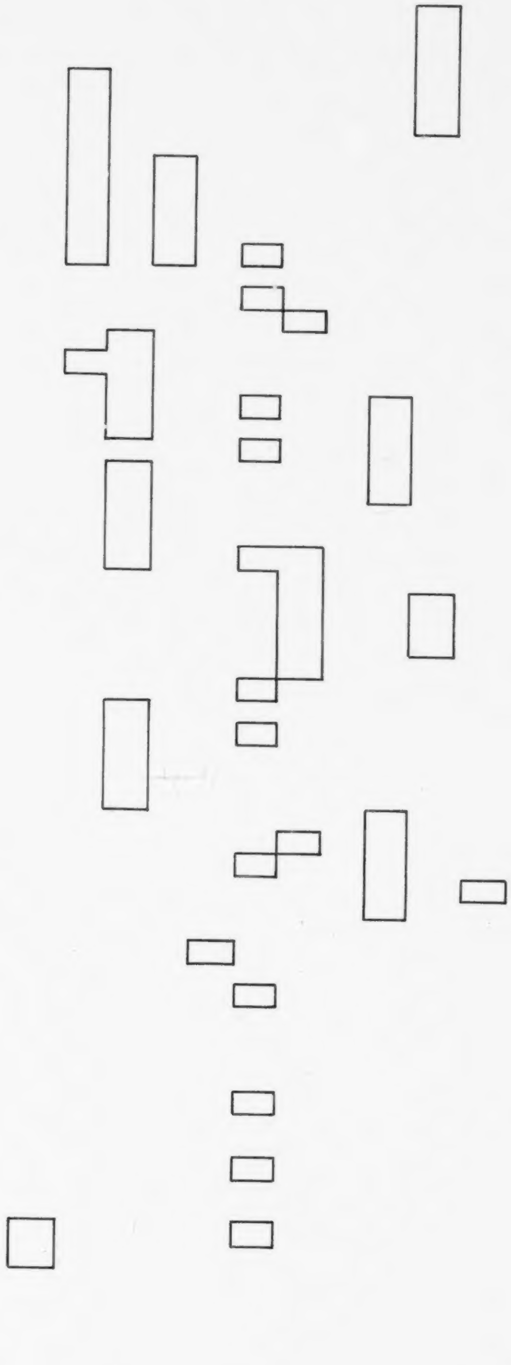
THE DRIVING SITUATIONS TEST SCORING STENCIL

PLANNED SITUATIONS MODERATELY HIGH CRITICALITY



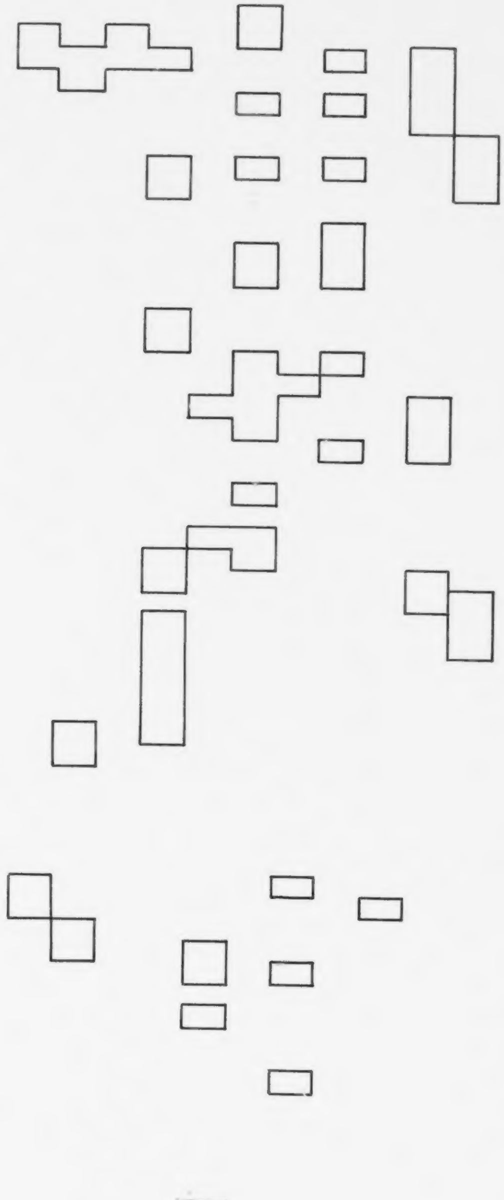
THE DRIVING SITUATIONS TEST SCORING STENCIL

UNPLANNED SITUATIONS MODERATE, MODERATELY LOW, AND LOW CRITICALITY ITEMS



THE DRIVING SITUATIONS TEST SCORING STENCIL

PLANNED SITUATIONS MODERATE AND MODERATELY LOW CRITICALITY ITEMS



DRIVING KNOWLEDGE TEST
Instructions

This test consists of 105 questions that you should be able to answer about safe driving. An answer sheet is provided, so *do not write in this test booklet.* There is no time limit for the test.

The first 97 questions are "multiple choice." Several possible answers are given for each question, from which you are to choose the one you think is best.

Example of a question:

1. A red light means that you are to:
    - (a) continue driving
    - (b) stop
    - (c) slow down
    - (d) turn

To answer this question correctly, you should circle the letter (b) that appears on the line with number 1 on the answer sheet. This indicates that "stop" is your response.

Example of an answer:

1. a [✓ b] c d

Questions 98 through 105 are "completion items" for which you provide the answers yourself. None requires very long answers, so write just what you think is most important. *Remember to write on the answer sheet.*

When you have completed the test, close the booklet and wait for further instructions.

Make sure your name and your teacher's name
are written on the answer sheet.

TEST BOOKLET

1. In preventing injuries from collisions, the seat belt and shoulder harness in combination are:
   (a) as effective as the seat belt alone
   (b) more effective than either alone
   (c) as effective as the shoulder harness alone
   (d) more helpful in reducing whiplash injuries than other types of injuries

2. Adjusting the sideview mirror so that the door handle and the tail of your car can be seen:
   (a) is particularly important in parallel parking
   (b) provides a reference point for judging the distance of other cars
   (c) will prevent you from seeing passing cars
   (d) keeps you from seeing enough of the roadway

3. Placing the car in neutral before starting the engine:
   (a) prevents lurching forward if the foot slips off the clutch pedal
   (b) saves wear on the clutch
   (c) may cause the engine to race
   (d) may allow the car to roll backward

4. When attempting to start a car, jumping the accelerator:
   (a) is a good idea because it gets plenty of gas to the carburetor
   (b) has little effect on the ease of starting
   (c) may flood the engine
   (d) helps prevent vapor lock

5. When the starter works but the engine will not start, any one of several problems may be the cause. Which of the following problems is *NOT* the cause?
   (a) a flooded engine
   (b) a wet ignition system
   (c) a frozen fuel line
   (d) a poor connection at the battery cable

6. Once a manual shift car has been shifted into third gear:
   (a) the left foot should remain on the clutch pedal for emergency reactions
   (b) the left foot should be rested against the brake pedal for possible emergency stopping
   (c) the left foot should be moved away from the clutch to avoid "riding" it
   (d) speeds of under 40 mph should be avoided

7. Pulling away quickly tends to:
   (a) save on gas consumption
   (b) wear out the carburetor
   (c) burn more gas than necessary
   (d) reduce swaying

8. When accelerating on snowy or other slippery surfaces, smooth steady acceleration:
   (a) is not as important as it is on dry surfaces
   (b) helps keep the rear wheels from spinning
   (c) is best accomplished by starting in first gear in a manual shift car
   (d) is no easier when using snow treads

9. Shifting gears while turning should be avoided because:
   - (a) both hands should be on the steering wheel
   - (b) the foot should be ready to brake if necessary
   - (c) the driver's attention is distracted
   - (d) all of the above

10. In general, the safest driving speed on the roadway is:
    - (a) 5 mph faster than the average car
    - (b) 5 mph slower than the average car
    - (c) the average speed of the other cars
    - (d) a speed that more or less constantly varies from the posted speed limit

11. Before downshifting while driving at a relatively high speed, you should:
    - (a) increase your speed slightly
    - (b) slow down
    - (c) check the oil pressure
    - (d) pump or repeatedly jab the brake pedal

12. Which of the following is true of power brakes?
    - (a) They increase stopping distance
    - (b) They decrease stopping distance
    - (c) They do not change stopping distance
    - (d) They give the driver a better feel of the pavement

13. The *best* way to be sure that it is safe to back up is to:
    - (a) look out the left side window
    - (b) look directly out the rear window
    - (c) look into the rearview mirror
    - (d) blow the horn and wait a few seconds

14. When backing up, the driver should:
    - (a) rely entirely on mirrors to see behind him
    - (b) allow a greater stopping distance than when traveling forward at the same speed
    - (c) apply less pressure on the brake pedal when stopping because the brakes are more sensitive when the car is in reverse
    - (d) sound his horn before backing

15. Which of the following situations would be the *least* likely to produce a skid?
    - (a) slowing down abruptly
    - (b) driving at high speeds on curves and turns
    - (c) accelerating rapidly
    - (d) pumping the brakes to slow down gradually

16. The chief cause of accidents is:
    - (a) drivers failing to continually watch for hazards
    - (b) drunken drivers
    - (c) use of drugs by drivers
    - (d) faulty vehicles

17. Carbon monoxide from a faulty exhaust system:
    - (a) can kill you
    - (b) is harmful but can't kill
    - (c) is harmful to vision only
    - (d) isn't dangerous

18. When you begin to get tired when driving, it's a good idea to:
(a) turn on the heater
(b) focus your eyes on the road directly in front of the car
(c) listen to lively music
(d) close the car windows

19. Even a small amount of alcohol affects driving. A driver's judgment is affected by drinking alcohol in quantities as small as:
(a) 1 ounce of whiskey
(b) 2 ounces of whiskey
(c) 16 ounces of beer
(d) 24 ounces of beer

20. Rapid acceleration followed by sudden stops:
(a) is not dangerous
(b) invites rear-end collisions
(c) does more harm to the car than anything else
(d) is a normal practice of expert drivers in stop-and-go situations

21. Sudden strong wind gusts on highways:
(a) generally affect only the movement of large vehicles
(b) cause only visual problems because of dust and dirt blown about
(c) can move a car sideways into another lane
(d) do not affect the car's movement

22. When approaching areas on freeways where other vehicles are entering, a driver can help the traffic flow by:
(a) slowing down
(b) moving to the middle or passing lane
(c) speeding up to get clear of the area
(d) adjusting his speed to equal the speed of the entering vehicles

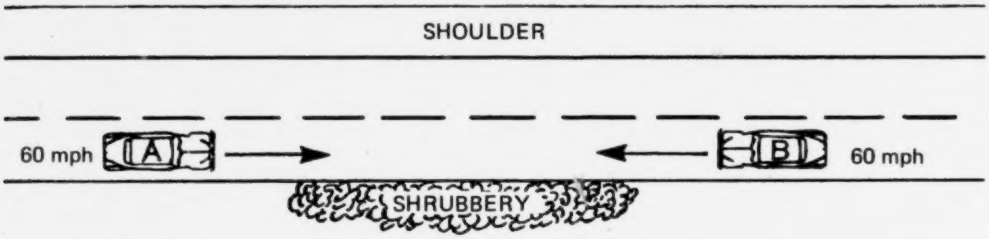
23. In this State the legal separation distance you must maintain from an emergency vehicle is:
(a) 200 feet
(b) 300 feet
(c) 400 feet
(d) 500 feet

24. Motorcycles should be followed at a greater distance than automobiles to lessen the chances of a collision because:
(a) they can stop faster than four-wheeled vehicles
(b) motorcyclists tend to drive dangerously
(c) motorcyclists cannot drive dependably because of poor rear vision
(d) motorcycle brakelights are not as reliable as automobile brakelights

25. If you are following a driver who is soon to leave an expressway, your greatest danger is that he will:
(a) slow down on the roadway rather than the off-ramp
(b) turn into the off-ramp at the last minute
(c) leave the expressway at too great a speed
(d) fail to signal in time

26. A broken line painted on the center of the highway means:
   (a) you may pass or change lanes
   (b) only drivers on the other side of the road may pass
   (c) you may not pass
   (d) use extreme caution

27.



In the collision situation above, the best course of action for Car A is to:
   (a) maintain his course and hope that Car B returns to his proper lane
   (b) pull off the road into the shrubbery at the right
   (c) pull off the road onto the shoulder at his left
   (d) hit the brakes and try to stop

28. Braking hard can cause loss of steering control because it:
   (a) may lock the front wheels
   (b) forces you to concentrate less on steering
   (c) can actually damage the steering mechanism when turning sharply
   (d) places weight on the front tires, which causes them to buckle

29. Vehicles are required to stop for a stopped school bus in your state:
   (a) except in an oncoming lane of a 4-lane highway
   (b) only if children can be seen crossing the road
   (c) only if a crossing guard signals for a stop
   (d) whenever it has stopped to take on or discharge passengers

30. Most pedestrians killed by automobiles were:
   (a) typically experienced drivers
   (b) generally middle-aged men
   (c) generally accident-prone people
   (d) not licensed drivers themselves

31. A basic precaution to take in driving down long steep downgrades is:
   (a) keep your foot lightly on the brake at all times
   (b) pump the brake occasionally
   (c) keep the car in "drive" or third gear
   (d) put the car in second gear or a lower driving range before starting down

32. If, while going through an intersection, you decide that you are going in the wrong direction, you should:
   (a) make a U-turn if no traffic is present
   (b) stop, back up, and turn in the direction you wish to travel
   (c) use your turn signal and turn quickly
   (d) continue through the intersection and drive around the block

33. A traffic signal showing an "advanced green" means that:
    (a) oncoming traffic is stopped during the early period of the green signal
    (b) oncoming traffic will get a green signal in advance of you
    (c) oncoming traffic may proceed while you are stopped
    (d) you must proceed with caution when oncoming traffic begins to move

34. On freeways you should be particularly alert as you approach entrances where acceleration lanes are:
    (a) short and the freeway speed is slow
    (b) long and the freeway speed is slow
    (c) short and the freeway speed is high
    (d) long and the freeway speed is high

35. Downshifting:
    (a) slows the car down by reducing the pulling power of the engine
    (b) slows the car down by increasing the pulling power of the engine
    (c) causes the fan to turn at a lower speed and prevents the car from overheating
    (d) has no effect on the rate of speed at which the fan turns

36. Accelerating slightly through a curve:
    (a) is usually a dangerous practice
    (b) reduces your chances of skidding if your original speed was slow enough
    (c) helps speed up traffic
    (d) is strictly for the race track

37. If a curve turns out to be sharper than you expected, you should:
    (a) slow down by releasing the accelerator and lightly applying the brake if necessary
    (b) accelerate slightly to reduce the chances of skidding
    (c) steer to the "inside" of the curve
    (d) steer to the "outside" of the curve

38. Where should you expect to find the most slippery surfaces?
    (a) on the crown of the road
    (b) near curves
    (c) on hills
    (d) at intersections

39. What procedure should you follow if you must drive through deep water?
    (a) slow down
    (b) slow down and shift into a lower gear
    (c) shift into a lower gear but try to maintain your original speed
    (d) drive near the center of the roadway where the water is considerably more shallow due to the slant of the pavement

40. Which area is likely to be the most slippery after a rainfall during freezing weather?
    (a) the shoulders of the road
    (b) the roadway over a bridge or culvert
    (c) roadways in sheltered areas
    (d) areas paved with asphalt rather than concrete

41. When stopping on wet pavement, stopping distance allowance should be increased by:
    (a) 25%
    (b) 50%
    (c) 200%
    (d) 300%

42. If a wheel drops off the roadway onto the shoulder while you are driving at normal highway speed, you should:
    (a) avoid braking if possible
    (b) stop the car as abruptly as possible
    (c) steer onto the roadway again as quickly as you can
    (d) quickly drive completely off the roadway and stop as quickly as possible

43. While crossing railroad tracks, you should:
    (a) attempt to shift as you normally do
    (b) downshift to increase your power
    (c) accelerate to clear the tracks quickly
    (d) avoid shifting gears

44. When driving on a six-lane divided highway (three lanes each way), the driver should:
    (a) drive in the right-hand lane if he isn't preparing to turn off the roadway
    (b) drive in the center lane(s) when driving slowly
    (c) drive in the left lane only to pass
    (d) do none of the above

45. When there is standing water on the roadway, the best reason for avoiding driving at very high speeds is:
    (a) the slippery roadway will increase stopping distance
    (b) your tires will tend to ride on top of the water
    (c) spray from other cars will make it hard to see
    (d) spray may cause the engine to stop

46. When driving on an ice- or snow-covered upgrade, you can prevent wheel spinning by:
    (a) increasing your speed when you begin to climb
    (b) shifting into a lower gear before starting up
    (c) maintaining a constant pressure on the accelerator
    (d) shifting into a lower gear and trying to maintain a constant speed

47. If your car is stuck in heavy snow during a storm and cannot be moved, you should:
    (a) stay in the car with the engine running and a window open
    (b) stay in the car with the engine running and windows closed
    (c) stay in the car with the engine off
    (d) go look for help

48. When his money misses the basket at the exact-change booth of a toll plaza, the driver should:
    (a) retrieve the money quickly and put it in the basket before proceeding
    (b) not attempt to retrieve the money, but replace it
    (c) continue to drive through in order not to delay following vehicles
    (d) wait until the attendant arrives

49. Which of the following vehicles are frequently required to stop for a railroad crossing?
    (a) tank trucks carrying flammable materials
    (b) school buses
    (c) passenger buses
    (d) all of the above

50. When visibility is reduced, day or night, by heavy fog, rain, sleet, or snow, the driver should:
    (a) use parking lights rather than high or low beams since their color is easier for oncoming vehicles to see
    (b) use low-beam headlights
    (c) use high-beam headlights
    (d) use four-way flashers

51. To keep the engine cool when standing in heavy traffic during a period of extreme heat, the driver should:
    (a) turn off the engine until traffic begins to move
    (b) shift to neutral and let the engine idle
    (c) shift to neutral and race the engine slightly
    (d) turn the engine off occasionally

52. When it is necessary that a disabled manual transmission car be moved a few feet to get it completely off the roadway, the driver should:
    (a) press the starter, which will cause the car to move
    (b) not press the starter because it will drain the battery quickly
    (c) push the car off the roadway
    (d) leave the car where it is and wait for a tow truck to arrive

53. What proportion of the nation's highway deaths are caused by drivers who have been drinking alcoholic beverages?
    (a) one-tenth
    (b) one-quarter
    (c) one-half
    (d) two-thirds

54. Which of the following substances reduces alcohol concentration in the blood by up to one-half?
    (a) coffee
    (b) any liquid
    (c) food, particularly carbohydrates
    (d) aspirin

55. About how many bottles of beer or one-ounce shots of whiskey can a 150-pound person drink in an hour before becoming intoxicated by most legal standards?
    (a) 1
    (b) 2
    (c) 5
    (d) 8

56. To offset the glare caused by oncoming blinding headlights, the driver should:
    (a) squint his eyes, keeping them on the center of his lane
    (b) try to maintain normal eye position since any movement away will be dangerous
    (c) focus eyes on the right side of the roadway beyond the oncoming vehicle
    (d) look down, if road is straight, and lift eyes when oncoming vehicle has passed

57. If the accelerator becomes stuck in the down position, the first thing you should do is:
    (a) reach down and try to pry it up with your hand
    (b) try to pry it up with your foot
    (c) apply the brakes and look for a safe place to leave the roadway
    (d) turn the ignition off

58. If your brakes fail while you are on the roadway, the first thing you should do is:
(a) keep your foot on the brake and wait until you get brake action again
(b) shift into a lower gear
(c) leave the roadway
(d) pump your brakes a few times

59. If *power brakes* fail due to loss of power, the driver should:
(a) steer the car onto the road shoulder where it will stop as it loses speed
(b) *not* try to exert more pressure on the pedal since it will not help
(c) exert more pressure on the pedal
(d) try pumping the brake pedal

60. If your car is running low on fuel and there are no service facilities nearby, you should:
(a) drive fast to reach a service station before the fuel runs out
(b) continue at your present speed until you reach a service station
(c) reduce speed to about 30 mph for maximum conservation of fuel
(d) stop the car and flag down another motorist for help

61. Prescription drugs taken in combination with alcoholic beverages:
(a) can cause trouble unless the drug was prescribed by a licensed physician
(b) will tend to have their effects cancelled by the effect of alcohol
(c) will cause trouble if you drink too much
(d) can produce extremely harmful effects

62. The most important reason to have a car's mechanical condition inspected periodically is:
(a) to spot a dangerous situation
(b) to meet a state inspection requirement
(c) to become better acquainted with the way the car works
(d) to avoid breakdown on the road

63. When is the best time to pull back into lane after passing another car?
(a) when the other driver signals with his turn indicator
(b) when you can see the other car through your rear window
(c) when the other car's left headlight is visible in the rearview mirror
(d) when both of the other car's headlights are visible in the rearview mirror

64. When turning right into an angle parking lane, which points on your car are the most likely to strike other cars?
(a) left and right front fenders
(b) right front fender and right rear door
(c) left front fender and left rear door
(d) left front fender and right rear door

65. When making a right turn from a busy street into a narrow side street you should:
(a) come almost to a stop before beginning the turn
(b) slow down a little more than usual
(c) swing a little to the left before beginning your turn
(d) shift into first before beginning the turn

66. Which of the following is most important in determining how fast you can drive in *fog*?
(a) how far you can see
(b) how quickly you can stop
(c) amount of traffic
(d) whether it is day or night

67. Why is it a good idea to slow down when the car is being buffeted by crosswinds?
    (a) it reduces the impact in case of a collision
    (b) it helps you "feel" wind effects more quickly
    (c) it helps the car grip the road better
    (d) it keeps you from moving sideways as far

68. What should you do in regard to your headlights when it begins to get dark?
    (a) avoid turning them on as long as you can see clearly; headlights may actually make it more difficult to see
    (b) turn on your parking lights as soon as it begins to get dark
    (c) turn on your low beams as soon as it begins to get dark
    (d) turn on your high beams as soon as it begins to get dark

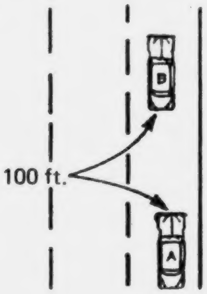
69. If you come up behind a compact car at night, it will:
    (a) be more difficult to spot than a standard car
    (b) look farther away than a standard car at the same distance
    (c) look closer than a standard car at the same distance
    (d) look larger than it really is

70. Tinted contact lenses:
    (a) help screen out sunglare
    (b) are better in general than sunglasses
    (c) reduce ability to see at night
    (d) are not much different from untinted lenses

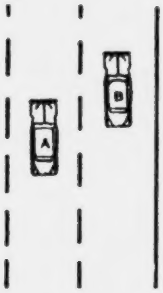
71. What is the main reason that it is unsafe to pass a moving car on the right?
    (a) it makes it hard to see traffic approaching from the left
    (b) it may distract the other driver
    (c) the other driver may suddenly move to the right
    (d) an oncoming driver planning to turn left can't see you

72. As Car A prepares to pass and passes Car B, in which position is A in the greatest danger from B?

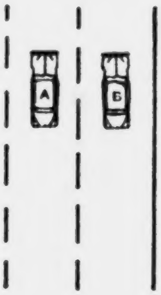
(a)



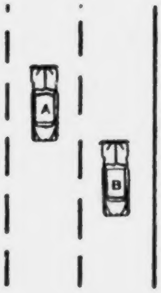
(b)



(c)



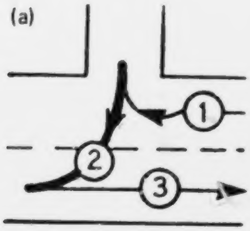
(d)



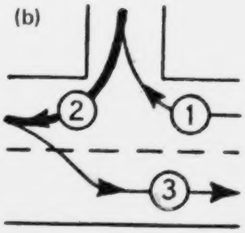
73. Looking to the sides of the road frequently:
    (a) is good because it helps you spot dangers
    (b) is good because it is relaxing
    (c) is bad because it takes your attention off the center of the road
    (d) is bad because it is tiring

74. Which of the following diagrams shows the best way to turn around by using a driveway? Steps 1 and 3 are taken going forward. The heavy line (Step 2) indicates that the car is backing up.

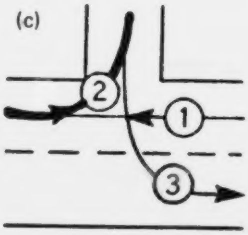
(a)



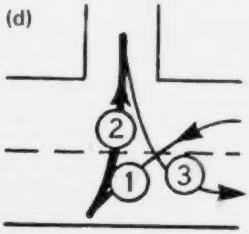
(b)



(c)



(d)



75. Under which of the following conditions should you sound your horn before passing another car?
   (a) at night
   (b) if the other car is signalling a right turn
   (c) when the other car is coming up on a car ahead of it
   (d) under any condition

76. You are about to pass another car. Suddenly you see a third car approaching you from ahead. If you're not sure whether or not you can make it, you should:
   (a) continue passing until you're sure one way or the other
   (b) hesitate for a moment until you're sure one way or the other
   (c) speed up a little to pass more quickly
   (d) slow down immediately and pull in behind the car you were passing

77. Before pulling out to pass a car you should check the:
   (a) rear and sideview mirrors
   (b) rear and sideview mirrors and side window
   (c) rear and sideview mirrors, side window, and look over the left shoulder
   (d) sideview mirror, rearview mirror, and then sideview mirror again

78. If you have had too much to drink and want to drive, a few cups of strong black coffee will:
   (a) do no good
   (b) help you sober up a little sooner
   (c) help you think a little more clearly for a short while
   (d) keep you from passing out at the wheel

79. When is it most important to check your speedometer?
   (a) when entering an expressway
   (b) when driving at night
   (c) after leaving an expressway
   (d) when approaching a hill

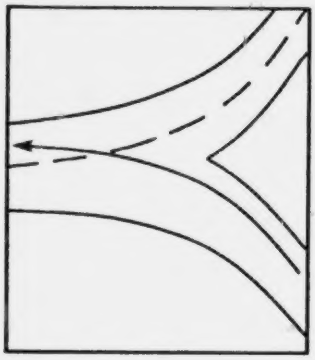
80. On which of the following curves do the most accidents occur?
   (a) gradual banked curves
   (b) gradual unbanked curves
   (c) moderate curves
   (d) extremely sharp curves

81. As a general rule, if you are planning to make a turn at an intersection, the best time to signal your turn is:
   (a) as soon as you've decided to make the turn
   (b) whenever it will cause the least confusion
   (c) approximately 100 feet from the intersection
   (d) when you begin to make the turn

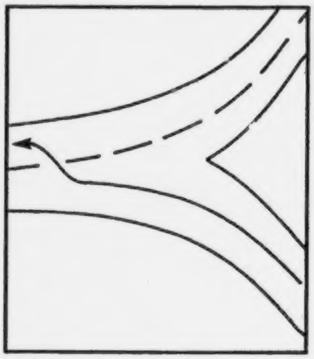
82. In general, people signal turns:
   (a) almost all the time
   (b) anytime there is a car behind them
   (c) about half the time
   (d) very rarely

83. Which of the following diagrams shows the correct way to take a "Y" intersection?

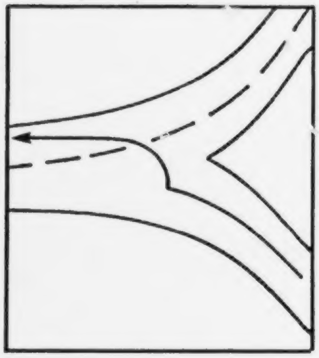
(a)



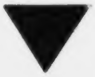
(b)

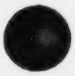


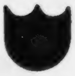
(c)

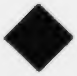


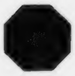
84. On your answer sheet, write the number that explains what the sign means on the line with the letter that corresponds with the sign.

(a)  ____________ 1. Interstate highway system

(b)  ____________ 2. Stop

(c)  ____________ 3. Railroad crossing

(d)  ____________ 4. Yield

(e)  ____________ 5. Caution

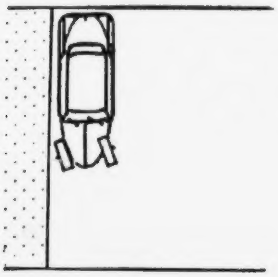
85. You are stopped in a line of traffic headed uphill, waiting for the light to change. You should keep the car positioned by:
   - (a) keeping your foot on the brake
   - (b) slipping the clutch
   - (c) putting the car in low gear
   - (d) idling in "drive" position

86. A road surface on a hot, rainy day is most slippery:
   - (a) just after the first raindrops fall
   - (b) during medium rain
   - (c) during heavy rain
   - (d) immediately after the rain stops

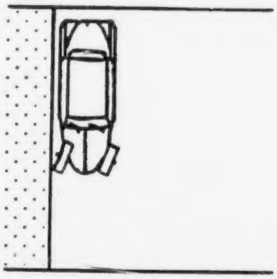
87. If a ball rolls out into the path of a car coming down the street, the driver should:
   - (a) try to go around the ball
   - (b) stop his car completely
   - (c) slow down
   - (d) continue at the same speed to avoid confusing other traffic

88. Which way should the front wheels of a car be turned when parking downhill on a street?

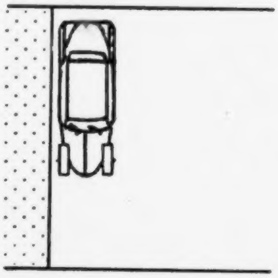
(a)



(b)



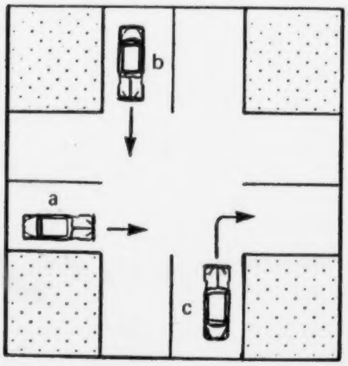
(c)



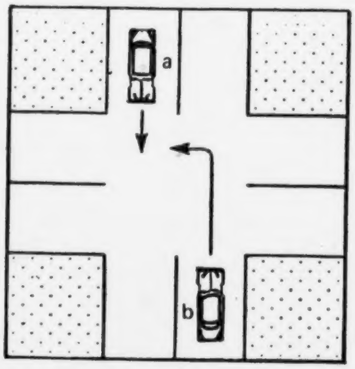
89. When stopped at an intersection waiting to turn left or cross oncoming traffic, you should:
   - (a) avoid entering the intersection until oncoming traffic has stopped
   - (b) pull to the center of the intersection and stop with your wheels straight ahead
   - (c) pull to the center of the intersection and stop with your wheels turned left
   - (d) pull to the center of the intersection and turn the car slightly to the left

All of the cars below have arrived where they are in each diagram at the same time. There are no traffic signs or lights. Circle the letter on your answer sheet for the car that has the right-of-way in each diagram.

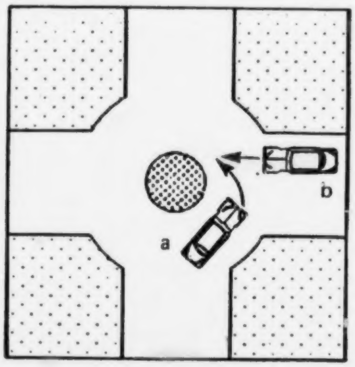
90.



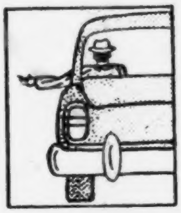
91.



92.

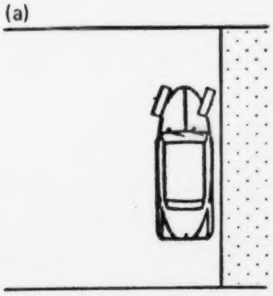


93. If the driver ahead of you extends his arm straight out, you can be fairly sure he is going to:
(a) do something different
(b) turn left at the next intersection
(c) turn right at the next intersection
(d) slow down or stop

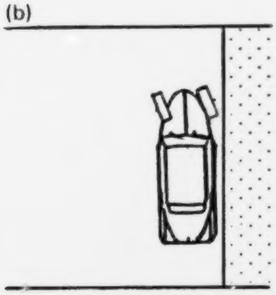


94. Which way should the front wheels of a car be turned when parking uphill on a street with a curb?

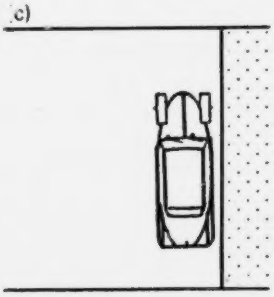
(a)



(b)



c)



95. When you come to a stop sign:
(a) you should always come to a complete stop
(b) you should come to a complete stop if traffic is present
(c) a complete stop isn't necessary as long as you proceed slowly enough
(d) you don't have to stop at the stop sign if you stopped earlier for cars in front

96. In heavy traffic, a driver:
(a) has to change lanes often to get through to his destination in a reasonable time
(b) should help prevent traffic jams by changing lanes
(c) should stay in one lane as much of the time as possible
(d) should change lanes every so often

97. When turning at a crowded intersection, you should:
(a) try to move very carefully through the flow of pedestrians
(b) try to move through wherever there is a gap in the flow of pedestrians
(c) wait until there are no pedestrians actually in the intersection
(d) wait until there are no more pedestrians near the intersection

98. What is wrong with driving more slowly than the traffic flow?

99. What should you do if a tire blows out while you are driving?

100. During a rapid temperature drop to below freezing after rainfall, brakes should be tested periodically because:

101. When you hear the sound of a siren on an emergency vehicle, you should:

102. When you have found a place to park, what is the most important thing to do before you slow down to pull into it?

103. Passing behind another car on a two- or three-lane road is dangerous because:

104. If you stopped at a railroad crossing with more than one set of tracks, why should you wait at least 10 seconds after the train has passed before you start driving across the tracks?

105. Why is it dangerous to drive with the windows closed and the radio playing loudly?

DRIVING KNOWLEDGE TEST
Answer Sheet

NAME: ______________________________ TEACHER: ______________________________

1. a b c d
2. a b c d
3. a b c d
4. a b c d
5. a b c d
6. a b c d
7. a b c d
8. a b c d
9. a b c d
10. a b c d
11. a b c d
12. a b c d
13. a b c d
14. a b c d
15. a b c d
16. a b c d
17. a b c d
18. a b c d
19. a b c d
20. a b c d
21. a b c d
22. a b c d
23. a b c d
24. a b c d
25. a b c d
26. a b c d
27. a b c d
28. a b c d
29. a b c d
30. a b c d
31. a b c d
32. a b c d
33. a b c d
34. a b c d
35. a b c d
36. a b c d
37. a b c d
38. a b c d
39. a b c d
40. a b c d
41. a b c d
42. a b c d
43. a b c d
44. a b c d
45. a b c d
46. a b c d
47. a b c d
48. a b c d
49. a b c d
50. a b c d
51. a b c d
52. a b c d
53. a b c d
54. a b c d
55. a b c d
56. a b c d
57. a b c d
58. a b c d
59. a b c d
60. a b c d
61. a b c d
62. a b c d
63. a b c d
64. a b c d
65. a b c d
66. a b c d
67. a b c d
68. a b c d
69. a b c d
70. a b c d
71. a b c d
72. a b c d
73. a b c d
74. a b c d
75. a b c d
76. a b c d
77. a b c d
78. a b c d
79. a b c d
80. a b c d
81. a b c d
82. a b c d
83. a b c d
84. a ______
    b ______
    c ______
    d ______
    e ______
85. a b c d
86. a b c d
87. a b c d
88. a b c d
89. a b c d
90. a b c d
91. a b c d
92. a b c d
93. a b c d
94. a b c d
95. a b c d
96. a b c d
97. a b c d

98. ______________________________
____
____
____

99. ______________________________
____
____
____

100. ______________________________
____
____
____

101. ______________________________
____
____
____

102. ______________________________
____
____
____

103. ______________________________
____
____
____

104. ______________________________
____
____
____

105. ______________________________
____
____
____

DRIVING KNOWLEDGE TEST

Correct Answers

95% Standard

15 - b
16 - a
19 - a
26 - a
27 - b
41 - b
53 - c
55 - c
58 - d
66 - a
68 - c
73 - a
76 - d
77 - c
87 - b
103 - See answer booklet
104 - See answer booklet

Maximum - 1 error

85% Standard

2 - b
8 - b
10 - c
13 - b
17 - a
20 - b
21 - c
24 - a
25 - a
28 - a
29 - d
30 - d
32 - d
36 - b
37 - a
40 - b
42 - a
44 - c
45 - b
46 - c
49 - d
56 - c
61 - d
63 - d
69 - b
72 - b
75 - c
80 - c
81 - b
82 - c
84 - a - 4
    b - 3
    c - 1
    d - 5
    e - 2
85 - a
86 - a
90 - a
91 - a
95 - a
96 - c
97 - c
98 - See answer booklet
99 - See answer booklet
100 - See answer booklet
101 - See answer booklet

Maximum - 7 errors

70% Standard

1 - b
3 - a
4 - c
5 - d
6 - c
7 - d
9 - d
11 - b
12 - c
14 - b
18 - c
22 - b
23 - local
31 - d
33 - a
34 - c
35 - b
38 - d
39 - b
43 - d
47 - a
48 - b
50 - b
51 - c
52 - a
54 - c
57 - d
59 - c
60 - c
62 - a
64 - d
65 - b
67 - d
70 - c
71 - c
74 - c
78 - a
79 - c
83 - c
88 - b
89 - b
92 - a
93 - b
94 - b
102 - See answer booklet
105 - See answer booklet

Maximum - 14 errors

DRIVING KNOWLEDGE TEST
Answer Booklet

This booklet provides the correct answers to questions in the Driving Knowledge Test and explains why they are correct.

1. A seat belt and shoulder harness, in combination, are *more* effective than either alone. The seat belt restrains the lower part of the body while the shoulder harness prevents the upper part of the body from lurching forward and in that way keeps the chest from striking the steering column or the head from striking the windshield. Answer (b) is correct.

2. Adjusting the sideview mirror so that the door handle and tail of the car are visible provides a *reference point* to help you judge how far to the side of you another car is. Side mirrors are often pushed out of position and you may, without knowing it, be looking at cars two lanes away rather than those coming alongside you. Answer (b) is correct.

3. Placing the gearshift in a neutral position helps to prevent the car's lurching forward if your foot should accidentally slip off the clutch pedal. While it doesn't happen often, some accidents have occurred when a driver's foot has slipped off the clutch pedal while the car was in gear. Answer (a) is correct.

4. Most cars do not require pumping the accelerator except on extremely cold days. Pumping the accelerator under normal conditions may well flood the engine. Answer (c) is correct.

5. A flooded engine, wet ignition system, or frozen fuel line could all keep the engine from starting when the starter worked. However, a poor connection at the battery cable would not even allow the starter to work; it is, therefore, the correct answer. Answer (d) is correct.

6. Leaving your left foot on the clutch pedal is too likely to result in "riding it" and thus wearing out the clutch plate. Resting the left foot against the brake pedal may cause the brake lights to go on and confuse drivers behind you. There is no reason why you cannot drive under 40 miles an hour in third gear. Answer (c) is correct.

7. Pulling away very quickly, so-called "jack rabbit" starts, burns much more gas than is necessary and increases gas consumption. Answer (c) is correct.

8. Sudden acceleration on a slippery surface will cause the wheels to spin and the tires to lose traction. Snow treads and dry surfaces provide more traction so the problem is not as great. Starting in first gear supplies more power to the rear wheels increasing the chances of slipping. Answer (b) is correct.

9. Answers (a), (b), and (c) are all good reasons to avoid shifting gears while turning a corner. Answer (d) is correct.

10. Studies have shown that you are least likely to get in an accident when you are driving approximately the same speed as other cars on the roadway. Driving at a slower speed may *seem* safe, but it is not. Answer (c) is correct.

11. When you shift down, your engine will be forced to turn over faster. This produces a great deal more friction—that's why you downshift in the first place. If you are driving at a high speed, the sudden increase in friction could damage the engine. Therefore, you should slow down before you downshift. If you chose (a) you were probably confusing "revving" the engine, which may be a good idea, with increasing speed, which is not a good idea. Answer (b) is correct.

12. Your stopping distance at any speed is dependent upon the friction between your tires and the pavement. While power brakes are easier to apply, they don't have any appreciable effect upon your stopping distance. Answer (c) is correct.

13. Looking directly out the rear window is the only way to get a good look at things that may be behind you when you back up. Answer (b) is correct.

14. Because of the way most brakes are constructed, they do not grab as well when the wheels are turning in a reverse direction. Therefore, your stopping distance is greater when you are backing up. Answer (b) is correct.

15. Pumping your brakes helps to keep your wheels from locking and is therefore least likely to produce a skid. Answer (d) is correct.

16. While drinking, drugs, and unsafe vehicles cause a lot of accidents—especially severe accidents—most accidents occur because drivers are simply not paying attention. Answer (a) is correct.

17. Many people are killed each year from carbon monoxide that leaks into the automobile from a faulty exhaust system. Answer (a) is correct.

18. Turning on the heater, fixating on the road in front of you, or closing the windows, are good ways to make yourself even more tired. Lively music will help keep you awake. However, don't play it so loud that you can't hear warning signals like sirens. Answer (c) is correct.

19. *Any* amount of alcohol will affect driving. One ounce of whiskey is the smallest amount listed and therefore: Answer (a) is correct.

20. When you accelerate rapidly, the driver behind you is likely to do the same thing. Stopping suddenly almost invites him to run into you. In ordinary stop-and-go traffic, you can help "smooth out" the overall flow of traffic by accelerating and braking gently. Answer (b) is correct.

21. Sudden strong wind gusts tend to push your car sideways. If you are traveling at a high speed, you can easily be moved into another lane before you can notice and react. Answer (c) is correct.

22. Moving to another lane will allow cars to enter the freeway without any disruption in the speed of traffic. Since the speed of other cars is hard to judge, your slowing down will probably go unnoticed by the entering car—and perhaps by the car behind you as well. Answer (b) is correct.

23. This is just a memory item. If you don't know the answer, you should ask your teacher.

24. Most motorcycles can stop more quickly than automobiles, so you should maintain a greater following distance behind them. Answer (a) is correct.

25. Many drivers when planning to leave an expressway fail to maintain their speed until they reach the off-ramp. You should be prepared for the driver ahead to slow down upon nearing an exit. Answer (a) is correct.

26. A broken line in the center of a highway means that you may pass or change lanes if you wish. Answer (a) is correct.

27. The best course of action for Car A in this situation is to pull off the road and into the shrubbery. This way he risks only minor injury and damage. By maintaining his course he could escape a collision if the other driver altered his course; however, he is more likely to be killed or disabled for life. Attempting to reach the shoulder on the left will put him right in the path of Car B should Car B attempt to return to his own lane. Hitting the brakes will put the car in a skid and make it totally uncontrollable. Answer (b) is correct.

28. Braking hard will cause the front wheels to lock and the car will skid. Once this happens, they no longer guide the car. Answer (a) is correct.

29. While a school bus should have his warning lights on, you had better stop whenever a school bus is loading or discharging passengers. Most states allow you to pass if the bus is on the far side of a *divided* highway, but not any four-lane highway. Answer (d) is correct.

30. Many pedestrians are not drivers and do not understand an automobile's limitations. Statistics show that these pedestrians are the most likely to be killed by an automobile. Answer (d) is correct.

31. The best way to maintain a slow speed on a long downgrade is by placing the car in second or first gear and allowing engine friction to hold you back. The brakes should not be applied for a sustained period. Answer (d) is correct.

32. If you change your mind in the middle of an intersection, you must keep going and use several turns around the block to get back on the correct route. A U-turn, stopping, or turning quickly is very likely to cause an accident. Remember, it was *your* mistake. Answer (d) is correct.

33. "Advanced green" means that you get the green light before oncoming traffic. After making sure that oncoming cars will remain stopped, you can go ahead with a left turn. However, you should watch oncoming cars closely so you can tell when they have gotten the green light. Answer (a) is correct.

34. A short acceleration lane makes it difficult for an entering car to build up sufficient speed when the speed on the freeway is high. If you are traveling on freeways, you should be particularly alert near short acceleration lanes. Answer (c) is correct.

35. Downshifting reduces the speed of a car but increases the pulling power of the engine. It also causes the fan to turn at a faster speed. Answer (b) is correct.

36. Accelerating slightly through a curve helps maintain rear wheel friction and reduces your chances of skidding, assuming you are driving slowly enough to begin with. Answer (b) is correct.

37. If a curve turns out to be sharper than you expected, you will have to slow down. This is best done by applying the brakes lightly so you will not lock your wheels and find yourself in a skid. If you are going too fast, accelerating won't help nor will the way you steer. Answer (a) is correct.

38. Continued slowing down of cars near intersections tends to have a polishing effect on the road surface. Answer (d) is correct.

39. You must go through deep water slowly so as not to splash water over the ignition system. However, if you do not shift into a lower gear, you are likely to stall. Answer (b) is correct.

40. Since the earth is slow to respond to temperature changes, its surface will freeze more slowly than would a bridge or culvert. Answer (b) is correct.

41. On wet pavement stopping distance is increased about 50%. Hard-packed snow, incidentally, increases stopping distance 200%, while glare ice increases it 500%! Answer (b) is correct.

42. If one set of wheels suddenly drops off the roadway, you should avoid braking as this will tend to put the car in a skid. The correct procedure is to slow down gradually and to turn back on the roadway only when you've reached a safe speed. Answer (a) is correct.

43. Since shifting gears may cause a car to stall, it should be avoided. Answer (d) is correct.

44. On a six-lane divided highway, you should drive in the left lane only when it is necessary in order to pass other cars. The more distance you can put between you and traffic coming the other way, the better. If a car suddenly comes across the center line or median, you want as much time to react as is possible. Answer (c) is correct.

45. When the highway is covered with a thin layer of water, your tires will actually tend to ride on top of the water at very high speeds. This is called "hydroplaning," and it is almost like driving on ice. If the cars traveling the same speed as you are do not leave a track on the highway, you know you're going too fast. Answer (b) is correct.

46. When climbing up a slippery grade, you should maintain a constant pressure on the accelerator. Attempting to increase your speed or shifting to a lower gear will supply more power to the wheels and cause them to spin. Answer (c) is correct.

47. If your car is stuck in heavy snow during a storm, you want to keep the engine running both to keep you and the engine warm. However, remember to keep a window at least partially open to guard against carbon monoxide poisoning. Going off to look for help is a good way to freeze to death. Answer (a) is correct.

48. If you miss the exact change basket at a toll plaza, add some more change. After all, it was your "goof." Attendants are usually pretty busy and driving through without paying is against the law. Leaving your car to scramble after the change is time consuming and dangerous. Answer (b) is correct. (Don't worry if you got it wrong; it doesn't count very much.)

49. Tank trucks, school buses, and passenger buses are frequently required to stop at railroad crossings. You had better be prepared to stop if you are approaching a railroad crossing behind any one of them. Answer (d) is the best.

50. The best way to let people see you is by using your headlights. However, keep them on low beam. High beams will not only blind oncoming cars but in heavy fog or rain will reflect in your own eyes and make it difficult to see. Four-way flashers are for emergency use only. Answer (b) is correct.

51. When standing in heavy traffic, you want to keep water moving through your cooling system. The best way to do this is to shift into neutral and race the engine slightly. Answer (c) is correct.

52. If your car with a manual transmission won't start, you can move it a short distance by placing the car in first gear and pressing the starter. It's far better to do this than to try to push the car by hand, or to leave it on the roadway, both of which are dangerous. Answer (a) is correct.

53. Approximately one-half of the nation's highway deaths are caused by drivers who have been drinking. Alcohol is the number one cause of automobile fatalities. Answer (c) is correct.

54. A lot of food in your stomach, particularly carbohydrates, can reduce alcohol concentrations in the blood up to one-half. Although eating won't keep you from becoming intoxicated, it is better than drinking on an empty stomach. Answer (c) is correct.

55. A 150-pound person could actually consume five bottles of beer or "shots" of whiskey before reaching the .10% level of blood alcohol concentration that is becoming the standard of intoxication in most states. Anyone who is found to have more than the legal standard is therefore a real menace. In fact, his chances of having an accident are more than *five times* what they would be if he were not drinking. Any more than one drink an hour is dangerous. Answer (c) is correct.

56. If you are blinded by headlight glare from an oncoming car, you should focus your eyes along the right side of the road. This minimizes the effects of the glare and allows you to see the edge of the roadway. Don't try to give the other driver "a dose of his own medicine." Your chances of having a head-on collision are even greater when the other driver can't see either. Answer (c) is correct.

57. If your accelerator becomes stuck in the down position, don't fool around—turn the ignition off. Once the engine is off, you can try to pry it up with your foot. Don't, for heaven's sake, try to reach it with your hand; it's too easy to lose control of the car. Also, remember to pull in at the nearest filling station and have them inspect your throttle linkage. Answer (d) is correct.

58. If your brakes fail suddenly, the first thing you should do is to pump them several times to try to build up pressure. Shifting to a lower gear will slow you down, but with bad brakes you want to *stop*. Leaving the roadway is a little drastic at this point. Answer (d) is correct.

59. Loss of power brakes is not rare. It often happens when a car stalls as you take the foot off the accelerator to slow down. However, the brakes will still work; it just takes a little bit more pressure on the pedal. Answer (c) is correct.

60. Your engine runs most efficiently and will give the longest mileage at about 30 miles per hour. It may be nerve wracking, but your chances of reaching a service station are better at this speed than a higher speed. Answer (c) is correct.

61. Many otherwise harmless prescription drugs can produce extremely harmful effects in combination with alcoholic beverages. Even a qualified physician may not know how a particular drug will mix with alcohol. It's best not to take any chances. Answer (d) is correct.

62. The reason for compulsory state inspection is to keep dangerous cars off the road. Having your car inspected and insisting that others do likewise is in your own best interest. Answer (a) is correct.

63. It is best to wait until you can see both headlights on the car that you have just passed before returning to the driving lane. Answer (d) is correct.

64. When you turn right into an angle parking lane, you will tend to start as far to the left as you can. This makes your left front fender a danger point. However, as you enter the parking lane, your car will be moving to the right, making your right rear door another danger area. Answer (d) is correct.

65. When pulling into a narrow side street, slow down a little more than you would at a normal intersection. However, since the car behind you will not expect you to turn at this point, even though you've signalled, you should not slow down any more than you have to, and certainly should not come to a stop. If you swing to the left, the driver behind you may think you're planning a left turn and try to pass you on the right. Answer (b) is correct.

66. In fog, you should drive no faster than you can see; that is, you should be driving slowly enough to stop before reaching any obstacle that suddenly appears in the roadway. Many accidents occur because drivers assume there is nothing in the roadway; they believe that if they can see the road, they are safe. Answer (a) is correct.

67. The faster you are driving, the more distance you will move sideways when a crosswind hits you. It's simple physics. By slowing down, you can recover before you cross into someone else's lane. Answer (d) is correct.

68. As it begins to get dark, you should turn on your headlights so that *others can see you.* They can see your headlights better than your parking lights. However, use your low beams; high beams can blind other drivers even in broad daylight. Answer (c) is correct.

69. At night the only clue to your distance from a car ahead is how far apart the taillights look. Since the taillights on a compact car are closer together than those on a standard car, a compact car will look farther away than it really is. For this reason you should slow down well before reaching a car ahead. Answer (b) is correct.

70. Tinted contact lenses can reduce the amount of light up to 20%. This won't help very much with sunglare, but it can reduce your ability to see at night. It's wise not to use tinted contact lenses for night driving. Answer (c) is correct.

71. Drivers do not expect to be passed on the right and frequently will move into a right-hand lane without signalling or looking. Answer (c) is correct.

72. Your greatest danger from the car you are passing comes as you move through his "blind spot," that is, in the "8 o'clock position" shown in answer (b). At this point you cannot be seen through either the rear or side mirror, nor out of the corner of the eye. For this reason, it is wise not to "hang" in another driver's blind spot but move through it quickly. Answer (b) is correct.

73. Your eyes must scan the sides of the road continually if you are to spot potential hazards before they appear directly in front of you. One of the biggest weaknesses of beginning drivers is their tendency to fix their eyes directly in front of them. Answer (a) is correct.

74. It is always dangerous to back into a highway from a driveway. The only way to avoid this is to back into the driveway from the highway. (c) shows the correct procedure. There is no point, however, in backing across two lanes of traffic as is shown in (d).

75. To sound your horn when you pass another car is annoying and unnecessary. It should be saved for times when it's needed. One of these times is when the car you are intending to pass is coming up behind another car that *he* may be intending to pass. Answer (c) is correct.

76. If you are in doubt as to whether you can pass safely, don't try it! Your available passing distance is getting smaller all the time you are trying to decide. If the situation was "chancy" to begin with, it will be more so by the time you make up your mind. Answer (d) is correct.

77. The only way to be sure of seeing another car in the lane next to you is to check both mirrors and the side window, and to look over your left shoulder. Remember the "blind spot." Answer (c) is correct.

78. The idea that black coffee will sober you up is a myth. It won't help you at all. Answer (a) is correct.

79. After driving a long time at a high speed, as you would on an expressway, you tend to "adapt," that is, you think you are driving more slowly than you really are. Therefore, when you leave an expressway, it is very important to check your speedometer to make sure that you are within the speed limit. Answer (c) is correct.

80. While extremely sharp curves might seem the most dangerous, drivers can see they are sharp and tend to slow down for them. Actually, moderate curves, because they don't look as sharp as they really are, are more dangerous. Answer (c) is correct.

81. The purpose in using your turn signal is to tell other drivers you are planning to turn at a particular place. You should, therefore, use it when they will best understand what you mean. If you plan to turn in a driveway beyond an intersection, you should not signal until you've passed the intersection; otherwise other drivers may misunderstand. Answer (b) is correct.

82. Unfortunately, most people signal turns only about half the time. Don't assume another driver is not going to turn just because his turn signal is not flashing. Answer (c) is correct.

83. You should take a "Y" intersection the same way you do any other intersection, that is, move into the correct lane as quickly as possible. In both (a) and (b) the driver spends too much time in the opposing lane. Answer (c) is correct.

84. The correct answers are (a)—4, (b)—3, (c)—1, (d)—5, (e)—2.

85. You should keep your foot on the brake any time you are stopped. Slipping the clutch or idling in "drive" will keep the car from sliding backward. However, they won't keep you from moving forward if you are struck from the rear. Answer (a) is correct.

86. On a hot day, oil in the pavement tends to come to the top. Just after the rain starts the surface will, therefore, be extremely slippery. After a while, the rain will wash the oil to the side of the road reducing the problem. Answer (a) is correct.

87. A ball rolling into the road is generally followed by a child, and not necessarily from the same direction as the ball. You should come to a complete stop until you've had a chance to check out the situation. Answer (b) is correct.

88. This one is easy! Only when the wheels are in the position shown in (b) will the car avoid rolling downhill if the brakes should fail to hold. Answer (b) is correct.

89. When you're stopped at an intersection waiting for a left turn, you should pull to the center of the intersection so that you can make the turn quickly when the time comes. However, you should keep your wheels pointed straight ahead so that if you are struck from behind you will not be pushed into oncoming traffic. Answer (b) is correct.

90. Car A legally has the right of way since Car B is coming from the left and Car C is preparing to turn. Notice that Car A would ordinarily pass in front of Car B anyway—that is why it is given the right of way. Answer (a) is correct.

91. Car A, since it is proceeding straight through the intersection, has the right-of-way over Car B. Answer (a) is correct.

92. Car A, already in the traffic circle, has the right-of-way over Car B entering the traffic circle. This makes sense. If Car A were the one that had to stop, so much traffic would back up behind him that Car B could never get into the intersection. Answer (a) is correct.

93. A hand straight out indicates a left turn. Answer (b) is correct.

94. When you are parked on a hill *where there is a curb*, your wheels should be in the position shown in (b). If the car starts backward, the wheels will strike the curb. The position shown in (a) isn't bad. However, the car could get up enough speed before the rear wheels struck the curb to actually climb the curb. Position (a) would have been the correct answer had there been no curb. Answer (b) is correct.

95. You must *always* come to a *complete* stop at a stop sign. There are at least three good reasons for this rule: First, it's easier to detect cars approaching from the side if you are stopped; secondly, if an approaching car is hidden by your door post, by stopping you give it a chance to come out where you can see it; finally, if you do see traffic approaching, you can gauge its speed better if you're completely stopped. Answer (a) is correct.

96. Lane changes are always dangerous in heavy traffic and they don't accomplish very much. Drivers should stay in one lane as much of the time as is possible. Answer (c) is correct.

97. Whenever pedestrians are in the street they have the right-of-way. On the other hand, you will hold up traffic if you wait for pedestrians that are not even near the intersection. Answer (c) is correct.

98. Driving more slowly than the traffic flow increases the chance of an accident. While you may feel safer, you run a risk of being struck from behind. The fact that you won't be legally responsible for the accident will not make a whiplash injury less painful.

99. The most important thing to remember if your tire blows is *not* to use your brakes. Using the brakes could cause your car to skid. Grab the steering wheel firmly and try to steer a straight course. Ease up on your accelerator and depress the brake only after you've slowed down.

100. Damp brake linings are particularly dangerous in freezing weather. You should test them occasionally to make sure you have them when you need them.

101. When you hear the sound of a siren you should slow down, open the window so you can hear better, and look around to see if you can find its source. It is not necessary to pull over and stop unless you can see that it is approaching you.

102. The first thing to do before you slow down to pull into a parking place is to signal to cars behind you. Following drivers have no idea what you are going to do unless you tell them. Many rear-end collisions are caused by drivers stopping, without warning, in order to park.

103. Passing behind another car on a two- or three-lane roadway is a risky business. The driver ahead of you may not complete the pass until an oncoming car is almost on top of you. Or, if he does complete the pass and return to the driving lane, he may not leave you enough room to get in behind him. In addition, the oncoming car can't help you out very much since he may not be able to see you until too late.

104. Many drivers are killed at railroad crossings each year because they started across the tracks as soon as a train passed and were struck by a train coming in the opposite direction. Never cross a railroad track unless you have clear vision in both directions. This is true even if there are signals—they don't always work.

105. It is difficult to hear sirens and other emergency signals with normal road and traffic noise. To have the radio playing loudly with the windows closed makes it almost impossible.